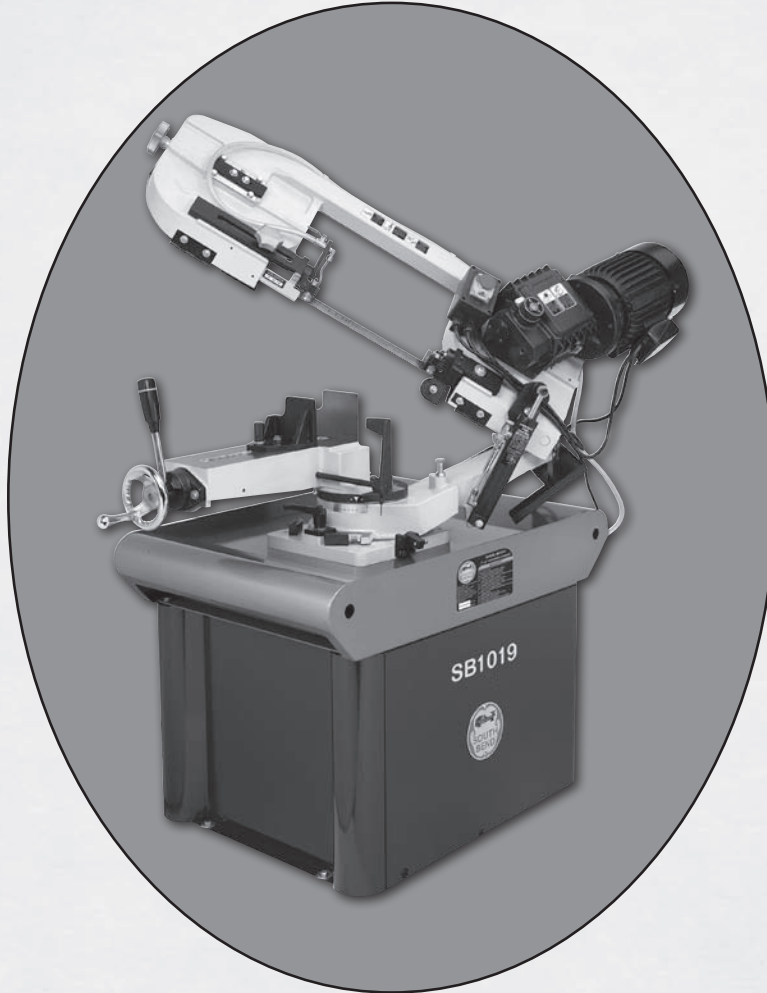




7" x 8" SWIVEL MAST METAL-CUTTING BANDSAW

MODEL SB1019



OWNER'S MANUAL

South Bend Lathe Co.TM

Hundreds of Thousands of Lathes Sold With a Tradition of Quality Since 1906!



Scope of Manual

This manual helps the reader understand the machine, how to prepare it for operation, how to control it during operation, and how to keep it in good working condition. We assume the reader has a basic understanding of how to operate this type of machine, but that the reader is not familiar with the controls and adjustments of this specific model. As with all machinery of this nature, learning the nuances of operation is a process that happens through training and experience. If you are not an experienced operator of this type of machinery, read through this entire manual, then learn more from an experienced operator, schooling, or research before attempting operations. Following this advice will help you avoid serious personal injury and get the best results from your work.

Manual Feedback

We've made every effort to be accurate when documenting this machine. However, errors sometimes happen or the machine design changes after the documentation process—so the manual may not exactly match your machine. If a difference between the manual and machine leaves you in doubt, contact our customer service for clarification.

We highly value customer feedback on our manuals. If you have a moment, please share your experience using this manual. What did you like about it? Is there anything you would change to make it better? Did it meet your expectations for clarity, professionalism, and ease-of-use?

South Bend Lathe, Inc.
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Updates

For your convenience, any updates to this manual will be available to download free of charge through our website at:

www.southbendlathe.com

Customer Service

We stand behind our machines. If you have any service questions, parts requests or general questions about the machine, feel free to contact us.

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About This Machine

Capabilities

This metal cutting bandsaw uses a hydraulically-stabilized gravity-fed headstock to make straight cuts through workpieces that are clamped in a vise. Since the workpiece is secured and remains stationary while the blade lowers automatically, accuracy and operator safety are maximized, since the operator can stand safely away from the machine as it is cutting.

The vise on the Model SB1019 is capable of holding rectangular stock up to 7" x 8" and round stock up to 7".

After a cut is complete, the OFF switch is triggered and the motor automatically turns off.

Features

In addition to its capabilities, the Model SB1019 has several features to increase versatility and efficiency.

The headstock swivels and can be rotated to make angled cuts from 45° to the left through 45° to the right while three blade speeds ensure that the proper cutting rate is available for a variety of blade pitches, workpiece sizes and material types.

Both the downfeed rate and pressure are adjustable for fine-tuning each cutting operation and an adjustable auto-OFF power switch maximizes safety and minimizes energy use by turning the machine off at the end of every cut.

A flood coolant system, comprised of a coolant tank and pump in the machine base and an adjustable nozzle at the blade provide adequate coolant for optimum cutting efficiency and blade life.

A storage compartment in the cabinet base provides a convenient location for keeping spare blades or other accessories and the transport handle makes moving the machine easy.

Identification

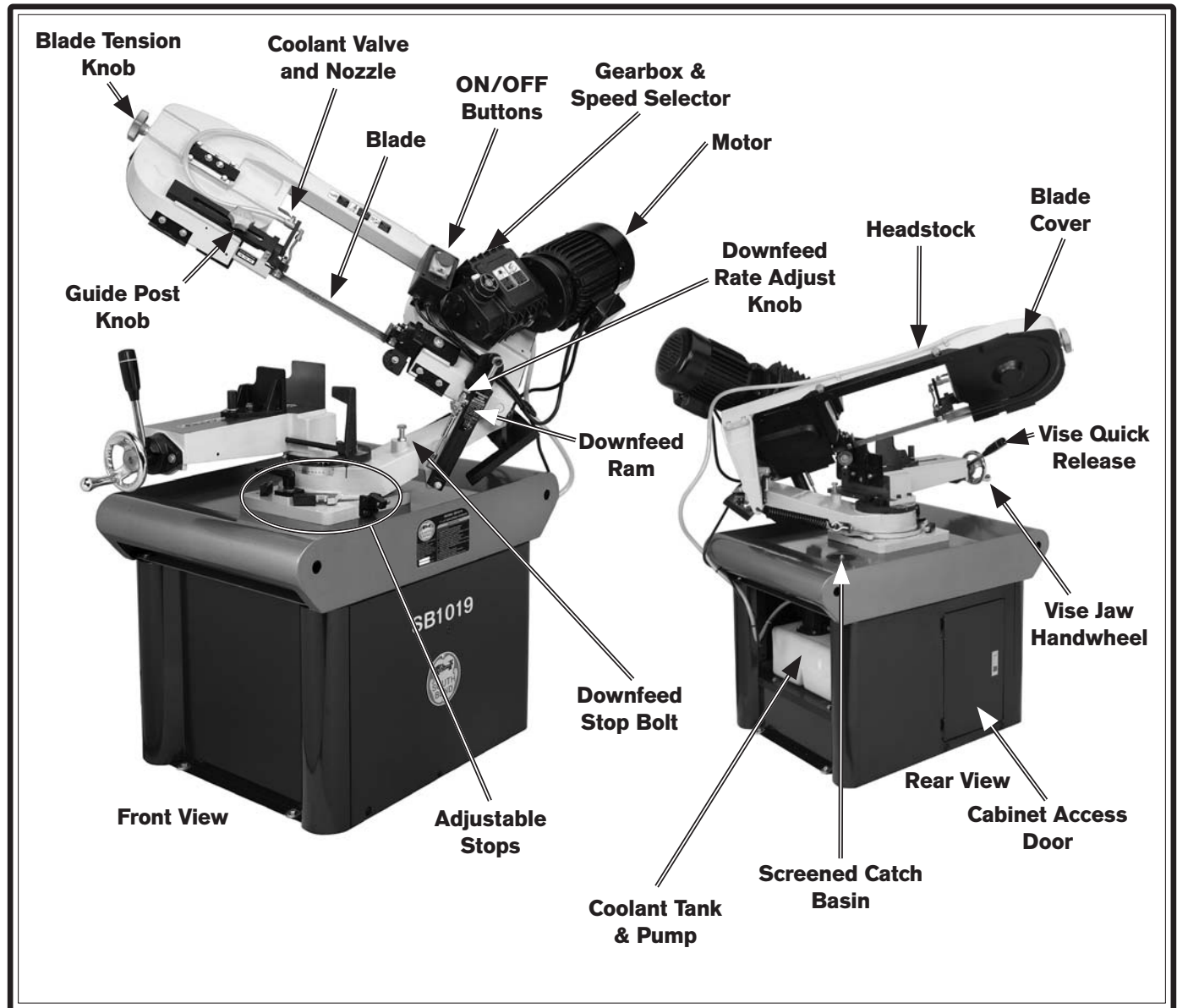


Figure 1. Identification of controls and components.

!WARNING

Serious personal injury could occur if you connect the machine to power before completing the setup process. **DO NOT** connect power until instructed to do so later in this manual.

!WARNING

Untrained users have an increased risk of seriously injuring themselves with this machine. Do not operate this machine until you have understood this entire manual and received proper training.

	<h1 style="margin: 0;">Machine Specifications</h1> <p style="margin: 0;">P.O. Box 2027, Bellingham, WA 98227 U.S.A. PHONE: (360) 734-1540 • © South Bend Lathe Co. www.southbendlathe.com</p>	
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Model SB1019

7" x 8" Swivel Mast Metal-Cutting Bandsaw

Product Dimensions:

Weight	481 lbs.
Length/Width/Height	51¼" x 29½" x 60⅝"
Foot Print (Length/Width)	51¼" x 25⅝"
Space Required for Full Range of Movement (Length/Width/Height)	59" x 47" x 67⅜"

Shipping Dimensions:

Type	Wood Slat Crate
Weight	558 lbs.
Length/Width/Height	52" x 30" x 61"

Electrical:

Required Power Source	110V or 220V, Single-Phase, 60 Hz
Switch	Safety ON/OFF Switch
Switch Voltage	110V
Cord Length	7½ ft.
Cord Gauge	14 gauge
Minimum Circuit Size	20 Amps @110V, 15 Amps @ 220V
Plug Included	Yes
Included Plug Type	NEMA 5-15 for 110V
Recommended Plug Type for 220V	NEMA 6-15

Motors:

Main

Type	TEFC Capacitor Start Induction
Horsepower	1½ HP
Voltage	110V/220V
Phase	Single-Phase
Amps	18/9A
Speed	1725 RPM
Cycle	60 Hz
Number Of Speeds	1
Pre-Wired	110V
Power Transfer	Sealed Worm Gear
Bearings	Shielded and Permanently Sealed

Main Specifications:

Operation Information

Head Swivel	45 to 45.
Blade Speeds	135, 197, 256 FPM
Std. Blade Length	93"
Blade Size Range	¾"

Cutting Capacities

Angle Cuts	45°L to 45°R
Vise Jaw Depth	10¼"
Vise Jaw Height	4½"
Max. Capacity Rect. Height At 90D	7"
Max. Capacity Rect. Width At 90D	8¼"
Max. Capacity Rnd. At 90D	7"
Max. Capacity Rect. Height At -45D	3⅜"
Max. Capacity Rect. Width At -45D	5½"
Max. Capacity Rnd. At -45D	5"
Max. Capacity Rect. Height At 45D	3⅜"
Max. Capacity Rect. Width At 45D	5½"
Max. Capacity Rnd. At 45D	5"

Construction

Wheel Construction Upper	Cast Iron
Wheel Construction Lower	Cast Iron
Body Construction	Cast Iron
Base Construction	Cast Iron
Stand Construction	Steel

Other

Wheel Size	11 ⁷ / ₁₆ "
Blade Guides Upper	Yes
Blade Guides Lower	Yes
Coolant Capacity	2½ Gal

Table Info

Floor to Cutting Area Height	33 ⁵ / ₁₆ "
------------------------------------	-----------------------------------

Other Specifications:

ISO Factory	ISO 9001
Country Of Origin	Taiwan
Warranty	1 Year
Serial Number Location	ID Label on Body Frame
Customer Setup and Cleaning Time	Approximately 1 Hour
Sound Rating (No Load)	80 db

Features:

Heavy-duty one-piece steel stand
 Adjustable hydraulic down feed
 Swivel mast with angle stops
 Built-in coolant system
 Storage cabinet
 Dual position vise
 Double ball bearings on each side of blade
 Quick change 3-speed blade control

Understanding Risks of Machinery

Operating all machinery and machining equipment can be dangerous or relatively safe depending on how it is installed and maintained, and the operator's experience, common sense, risk awareness, working conditions, and use of personal protective equipment (safety glasses, respirators, etc.).

The owner of this machinery or equipment is ultimately responsible for its safe use. This responsibility includes proper installation in a safe environment, personnel training and usage authorization, regular inspection and maintenance, manual availability and comprehension, application of safety devices, integrity of cutting tools or accessories, and the usage of approved personal protective equipment by all operators and bystanders.

The manufacturer of this machinery or equipment will not be held liable for injury or property damage from negligence, improper training, machine modifications, or misuse. Failure to read, understand, and follow the manual and safety labels may result in serious personal injury, including amputation, broken bones, electrocution, or death.

The signals used in this manual to identify hazard levels are defined as follows:



Death or catastrophic harm WILL occur.



Moderate injury or fire MAY occur.



Death or catastrophic harm COULD occur.



Machine or property damage may occur.

Basic Machine Safety

- 1. Owner's Manual:** All machinery and machining equipment presents serious injury hazards to untrained users. To reduce the risk of injury, anyone who uses THIS item MUST read and understand this entire manual before starting.
- 2. Personal Protective Equipment:** Operating or servicing this item may expose the user to flying debris, dust, smoke, dangerous chemicals, or loud noises. These hazards can result in eye injury, blindness, long-term respiratory damage, poisoning, cancer, reproductive harm or hearing loss. Reduce your risks from these hazards by wearing approved eye protection, respirator, gloves, or hearing protection.
- 3. Trained/Supervised Operators Only:** Untrained users can seriously injure themselves or bystanders. Only allow trained and properly supervised personnel to operate this item. Make sure safe operation instructions are clearly understood. If electrically powered, use padlocks and master switches, and remove start switch keys to prevent unauthorized use or accidental starting.
- 4. Guards/Covers:** Accidental contact with moving parts during operation may cause severe entanglement, impact, cutting, or crushing injuries. Reduce this risk by keeping any included guards/covers/doors installed, fully functional, and positioned for maximum protection.

- 5. Entanglement:** Loose clothing, gloves, neckties, jewelry or long hair may get caught in moving parts, causing entanglement, amputation, crushing, or strangulation. Reduce this risk by removing/securing these items so they cannot contact moving parts.
- 6. Mental Alertness:** Operating this item with reduced mental alertness increases the risk of accidental injury. Do not let a temporary influence or distraction lead to a permanent disability! Never operate when under the influence of drugs/alcohol, when tired, or otherwise distracted.
- 7. Safe Environment:** Operating electrically powered equipment in a wet environment may result in electrocution; operating near highly flammable materials may result in a fire or explosion. Only operate this item in a dry location that is free from flammable materials.
- 8. Electrical Connection:** With electrically powered equipment, improper connections to the power source may result in electrocution or fire. Always adhere to all electrical requirements and applicable codes when connecting to the power source. Have all work inspected by a qualified electrician to minimize risk.
- 9. Disconnect Power:** Adjusting or servicing electrically powered equipment while it is connected to the power source greatly increases the risk of injury from accidental startup. Always disconnect power **BEFORE** any service or adjustments, including changing blades or other tooling.
- 10. Secure Workpiece/Tooling:** Loose workpieces, cutting tools, or rotating spindles can become dangerous projectiles if not secured or if they hit another object during operation. Reduce the risk of this hazard by verifying that all fastening devices are properly secured and items attached to spindles have enough clearance to safely rotate.
- 11. Chuck Keys or Adjusting Tools:** Tools used to adjust spindles, chucks, or any moving/rotating parts will become dangerous projectiles if left in place when the machine is started. Reduce this risk by developing the habit of always removing these tools immediately after using them.
- 12. Work Area:** Clutter and dark shadows increase the risks of accidental injury. Only operate this item in a clean, non-glaring, and well-lighted work area.
- 13. Properly Functioning Equipment:** Poorly maintained, damaged, or malfunctioning equipment has higher risks of causing serious personal injury compared to those that are properly maintained. To reduce this risk, always maintain this item to the highest standards and promptly repair/service a damaged or malfunctioning component. Always follow the maintenance instructions included in this documentation.
- 14. Unattended Operation:** Electrically powered equipment that is left unattended while running cannot be controlled and is dangerous to bystanders. Always turn the power **OFF** before walking away.
- 15. Health Hazards:** Certain cutting fluids and lubricants, or dust/smoke created when cutting, may contain chemicals known to the State of California to cause cancer, respiratory problems, birth defects, or other reproductive harm. Minimize exposure to these chemicals by wearing approved personal protective equipment and operating in a well ventilated area.
- 16. Difficult Operations:** Attempting difficult operations with which you are unfamiliar increases the risk of injury. If you experience difficulties performing the intended operation, **STOP!** Seek an alternative method to accomplish the same task, ask a qualified expert how the operation should be performed, or contact our Technical Support for assistance.

Additional Metal Bandsaw Safety

- 1. Blade Condition.** A dull or damaged blade can break apart during operation, increasing the risk of operator injury. Do not operate with a dull, cracked or badly worn blade. Inspect the blade for cracks or missing teeth before each use.
- 2. Hand Placement.** Hands could be cut by the blade or crushed when lowering the headstock. Never position fingers or thumbs in line with the cut or under the headstock while it is moving.
- 3. Blade Guard.** Hands and fingers can easily be cut by the bandsaw blade. To reduce the risk of laceration injuries, do not operate this bandsaw without the blade guard in place.
- 4. Starting Position.** To reduce the likelihood of blade breakage and possible entanglement, never turn the saw **ON** with the blade resting on the workpiece.
- 5. Blade Replacement.** The blade can only make a safe and efficient cut if the teeth are facing the workpiece. When replacing blades, make sure the teeth face toward the workpiece. Wear gloves to protect hands and safety glasses to protect eyes.
- 6. Workpiece Handling.** A workpiece that shifts unexpectedly when being cut can result in impact or laceration injuries. To reduce the risk of injury, always securely clamp the workpiece in the vise and use additional support fixtures if needed. Never hold the workpiece with your hands during a cut. Flag long pieces to reduce the risk of tripping over them.
- 7. Power Interruption.** Unplug the machine and turn the power switch **OFF** after a power interruption. If left plugged in and turned **ON**, this machine will start up when power is restored, resulting in possible entanglement, laceration, or amputation hazards.
- 8. Hot Surfaces/Sharp Edges.** Due to the cutting process, a freshly cut workpiece, chips, and some machine components can be hot enough to burn you and sharp enough to cut you. Allow components to cool and use safe handling methods to reduce the risk of these injuries.
- 9. Moving Blade.** A moving bandsaw blade presents a serious risk for laceration or amputation injuries. Always allow the blade to come to a complete stop before mounting or repositioning a workpiece in the vise. Never touch a moving blade.

Preparation Overview

The purpose of the preparation section is to help you prepare your machine for operation. The list below outlines the basic process. Specific steps for each of these points will be covered in detail later in this section.

The typical preparation process is as follows:

1. Unpack the machine and inventory the contents of the carton.
2. Clean the machine and its components.
3. Make any necessary adjustments or inspections to ensure the machine is set up and ready for operation.
4. Connect the machine to the power source.
5. Test run the machine to make sure it functions properly and is ready for operation.

Things You'll Need

The items listed below are required to successfully set up and prepare this machine for operation.

For Machine Setup

- Wrench 12mm
- Wrench 14mm

For Power Connection

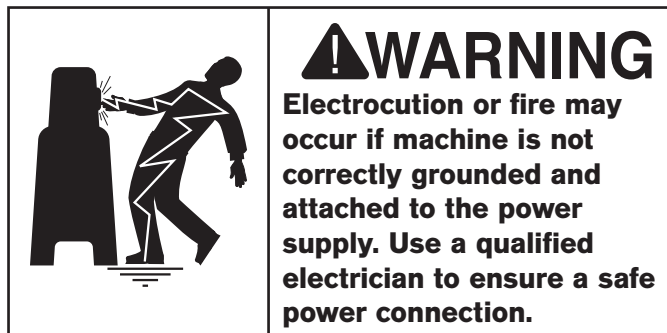
- A power source that meets the minimum circuit requirements for this machine. (Refer to the **Power Supply Requirements** section for details.)
- A qualified electrician to ensure a safe and code-compliant connection to the power source.

Power Supply Requirements

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed.

To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by a qualified electrician in accordance with all applicable codes and standards.



Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Rating at 110V 8.6 Amps

Full-Load Rating at 220V 4.3 Amps

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating.

If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements in the following section.

Circuit Information

A power supply circuit includes all electrical equipment between the main breaker box or fuse panel in your building and the incoming power connections inside the machine. This circuit must be safely sized to handle the full-load current that may be drawn from the machine for an extended period of time.

⚠ CAUTION

For your own safety and protection of property, consult a qualified electrician if you are unsure about wiring practices or electrical codes in your area.

Note: The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult a qualified electrician to ensure that the circuit is properly sized for safe operation.

Circuit Requirements for 110V

This machine is prewired to operate on a 110V power supply circuit that has a verified ground and meets the following requirements:

- Nominal Voltage 110V/120V
- Cycle 60 Hz
- Phase Single-Phase
- Circuit Rating..... 20 Amps
- Plug/Receptacle (included) NEMA 5-15

Circuit Requirements for 220V

This machine can be converted to operate on a 220V power supply. To do this, follow the **Voltage Conversion** instructions included in this manual. The intended 220V circuit must have a verified ground and meet the following requirements:

- Nominal Voltage 220V/240V
- Cycle 60 Hz
- Phase Single-Phase
- Circuit Rating..... 15 Amps
- Plug/Receptacle NEMA 6-15

Grounding Requirements

In the event of certain types of malfunctions or breakdowns, grounding provides a path of least resistance for electric current—in order to reduce the risk of electric shock.

For 110V Connection (Prewired)

This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug (similar to the figure below). The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

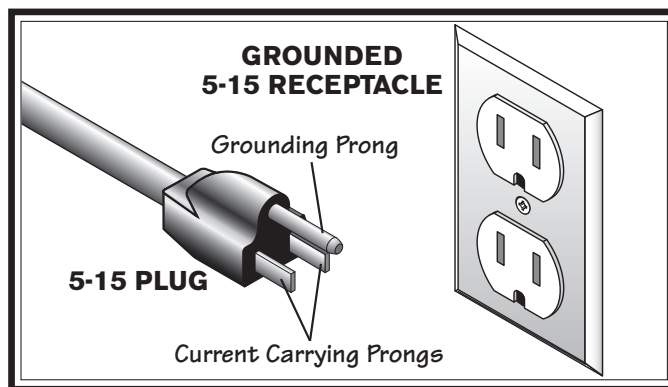


Figure 2. NEMA 5-15 plug and receptacle.

For 220V Connection

Use the plug type listed in the **Circuit Requirements** for this voltage. The listed plug (similar to the figure below) has an equipment-grounding wire to safely ground the machine. The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

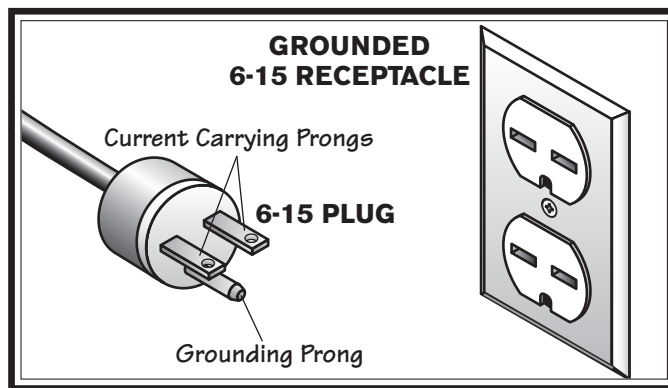


Figure 3. NEMA 6-15 plug and receptacle.

⚠ WARNING

Serious injury could occur if you connect the machine to power before completing the setup process. DO NOT connect to power until instructed later in this manual.

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded.

If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

Extension Cords

We do not recommend using an extension cord with this machine. If you must use one, only use it if absolutely necessary and only on a temporary basis.

Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle listed in the **Circuit Requirements** for the applicable voltage, and meet the following requirements:

Minimum Gauge Size.....16 AWG
Maximum Length (Shorter is Better)50 ft.

Unpacking

This item was carefully packaged to prevent damage during transport. If you discover any damage, please immediately call Customer Service at (360) 734-1540 for advice. You may need to file a freight claim, so save the containers and all packing materials for possible inspection by the carrier or its agent.

Inventory

The items listed below are optional components and are not required for bandsaw operations.

Description	Qty
A. Work Stop.....	1
B. Work Stop Rod	1

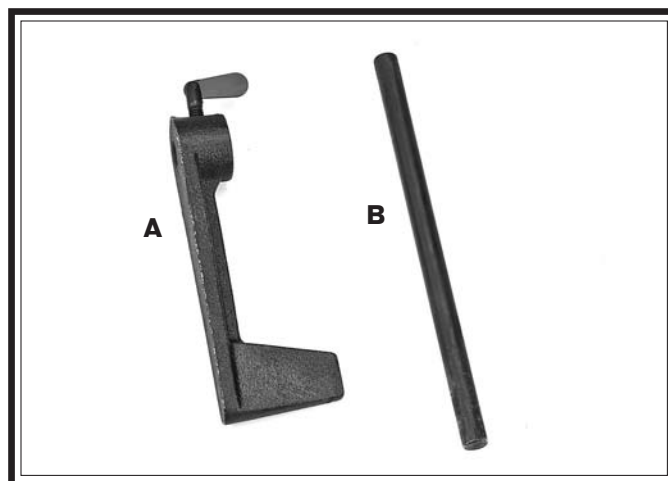


Figure 4. Inventory.

Cleaning & Protecting

The unpainted surfaces are coated at the factory with a heavy-duty rust preventative that prevents corrosion during shipment and storage. The benefit of this rust preventative is that it works very well. The downside is that it can be time-consuming to thoroughly remove.

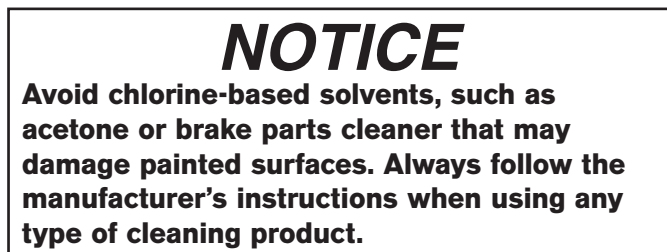
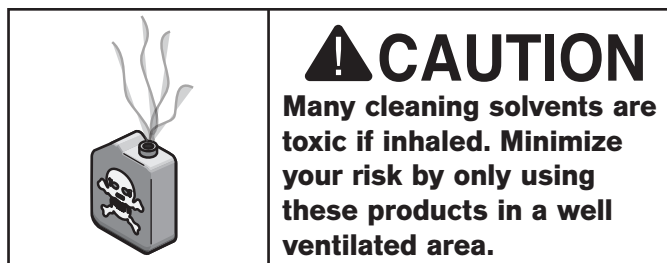
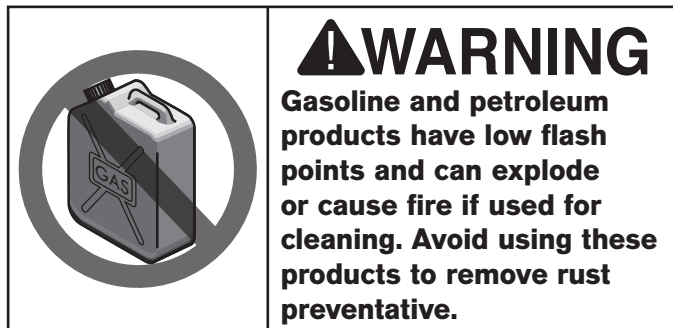
Be patient and do a careful job when cleaning and removing the rust preventative. The time you spend doing this will reward you with smooth-sliding parts and a better appreciation for the proper care of the unpainted surfaces.

Although there are many ways to successfully remove the rust preventative, we have cleaned thousands of machines and found the following process to be the best balance between efficiency and minimized exposure to toxic fumes or chemicals.

Before cleaning, gather the following:

- Disposable rags
- Cleaner/degreaser (certain citrus-based degreasers work extremely well and they have non-toxic fumes)
- Safety glasses & disposable gloves

Note: Automotive degreasers, mineral spirits, or WD•40 can be used to remove rust preventative. Before using these products, though, test them on an inconspicuous area of a painted area to make sure they will not damage it.



Basic steps for removing rust preventative:

1. Put on safety glasses and disposable gloves.
 2. Coat all surfaces that have rust preventative with a liberal amount of your cleaner or degreaser and let them soak for a few minutes.
 3. Wipe off the surfaces. If your cleaner or degreaser is effective, the rust preventative will wipe off easily.
- Note:** To clean off thick coats of rust preventative on flat surfaces, such as beds or tables, use a PLASTIC paint scraper to scrape off the majority of the coating before wiping it off with your rag. (Do not use a metal scraper or it may scratch the surface.)
4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant or light oil to prevent rust.

Location

Physical Environment

The physical environment where your machine is operated is important for safe operation and longevity of parts. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous or flammable chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature is outside the range of 41°–104°F; the relative humidity is outside the range of 20–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave access to a means of disconnecting the power source or engaging a lockout/tagout device.

Lighting

Lighting around the machine must be adequate enough that operations can be performed safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.

Weight Load

Refer to the **Machine Specifications** for the weight of your machine. Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

Space Allocation

Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual.

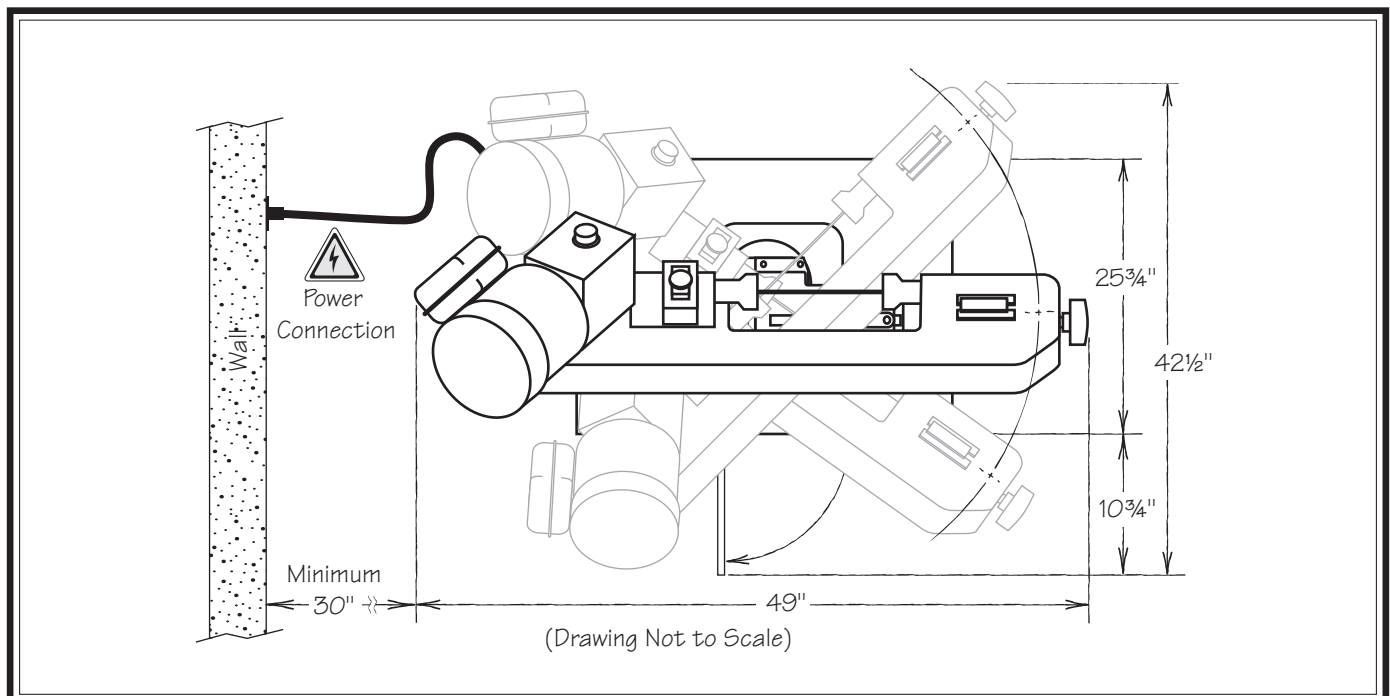
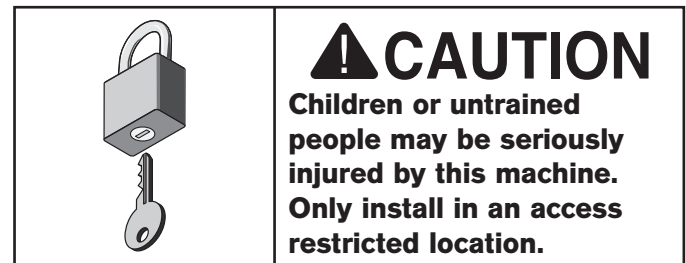
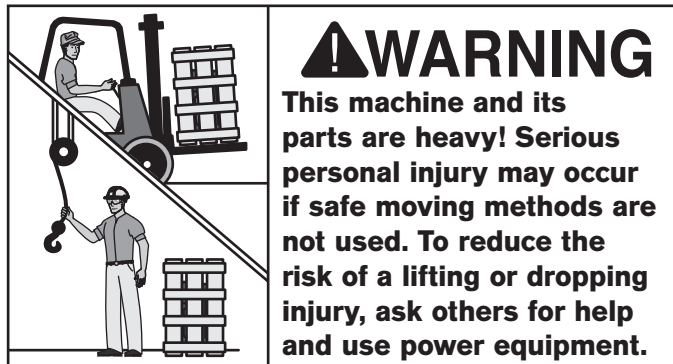


Figure 5. Clearances.

Lifting & Moving



Unbolt the machine from its pallet, then insert two round steel bars through the lifting holes in the machine base. Attach lifting straps with hooks to the bars, as shown in **Figure 6**. Lift the machine just high enough to clear the pallet, then move it to its final location. Have an assistant stabilize the machine while moving.

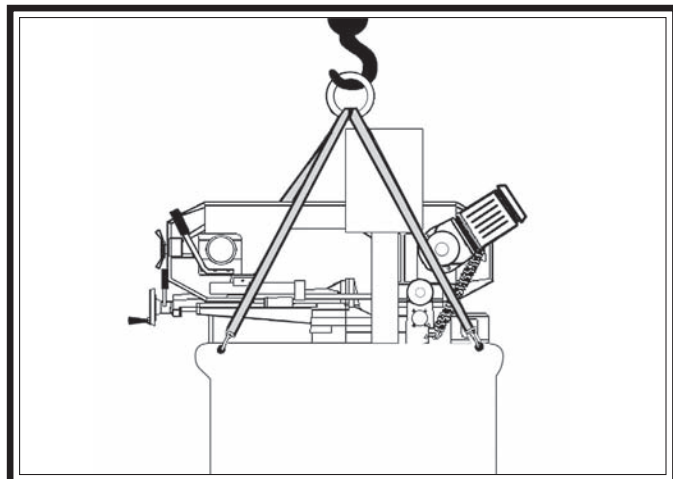


Figure 6. Lifting locations.

Leveling & Mounting

Generally, you can either bolt your machine to the floor or mount it on machine mounts. Although not required, we recommend that you secure the machine to the floor and level it while doing so. Because this is an optional step and floor materials may vary, hardware for securing the machine to the floor is not included.

NOTICE

We strongly recommend securing your machine to the floor if it is hardwired to the power source. Consult with your electrician to ensure compliance with local codes.

Leveling

Leveling machinery helps precision components, such as bed ways, remain straight and flat during the lifespan of the machine. Components on an unlevelled machine may slowly twist due to the dynamic loads placed on the machine during operation.

For best results, use a precision level that is at least 12" long and sensitive enough to show a distinct movement when a 0.003" shim (approximately the thickness of one sheet of standard newspaper) is placed under one end of the level.

See the figure below for an example of a high precision level.

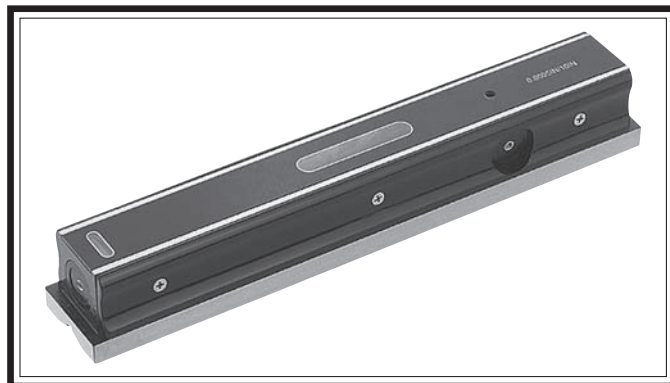


Figure 7. Example of a precision level.

Bolting to Concrete Floors

Lag screws and anchors, or anchor studs (**below**), are two popular methods for securing machinery to a concrete floor. We suggest you research the many options and methods for securing your machine and choose the best one for your specific application.

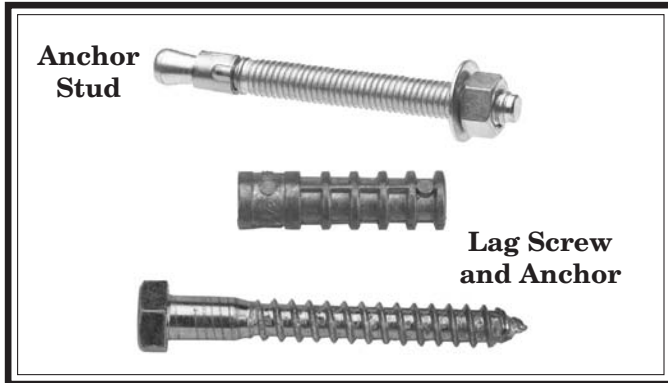


Figure 8. Common types of fasteners for bolting machinery to concrete floors.

Machine Mounts

Machine mounts are rubber pads mounted to a threaded stud, which can be fastened to the bottom of the machine.

Machine mounts offer certain advantages such as ease of installation, vibration dampening, and easy leveling. They also make it easier to relocate the machine later on.

The disadvantage of machine mounts is that the machine can shift or move over time. For this reason, electrical codes may limit their use if the machine is hardwired to the power source. Also, mounts may reduce the total surface area of machine-to-floor contact, depending on the design of the machine.



Figure 9. Typical machine mount.

Machine Setup

To ensure that your bandsaw arrives without damage to the hinge system, a shipping bracket was installed. After removing the shipping bracket, you will have to adjust the downfeed stop bolt.

To set up the machine:

1. Remove the shipping strap hex bolt and strap as shown in **Figure 10**. Keep this shipping bracket in case you transport or ship the bandsaw in the future.

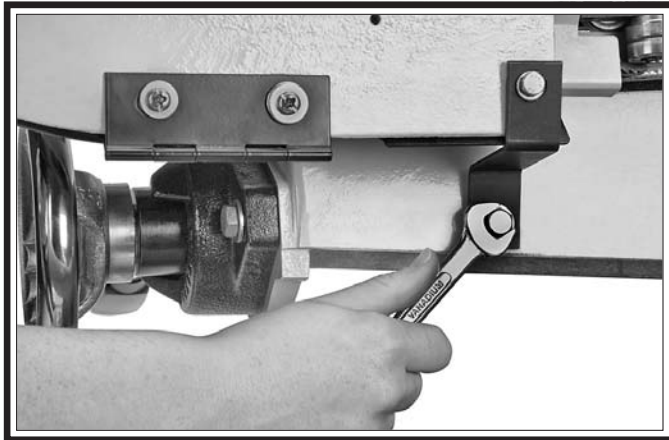


Figure 10. Removal of the shipping bracket.

2. Adjust the downfeed stop bolt and jam nut shown in **Figure 11** with a 14mm wrench, so the bandsaw blade teeth are just below the table surface when the cut is complete.

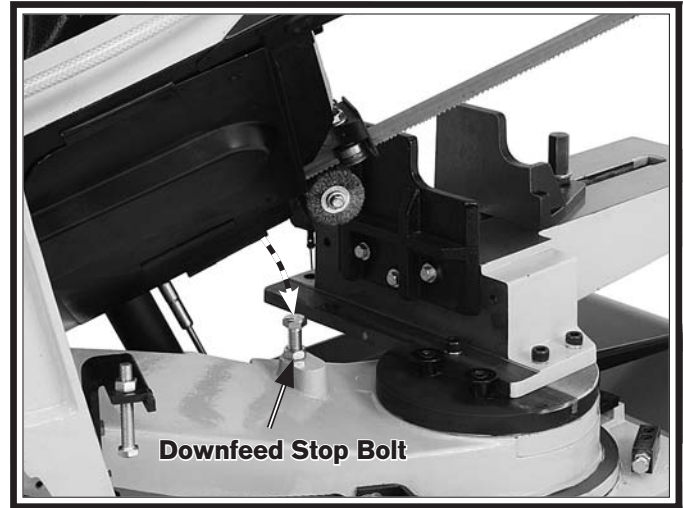


Figure 11. Adjusting downfeed stop bolt.

3. Insert the work stop rod approximately $\frac{3}{4}$ " into the vise base.
4. Tighten the hex bolt shown in **Figure 12**.

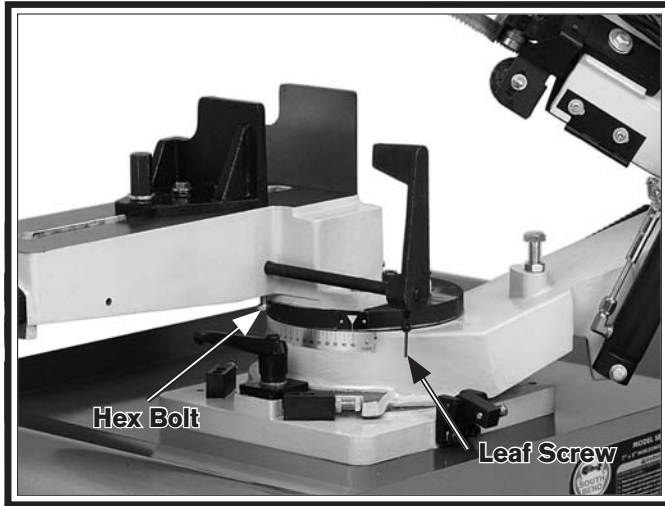
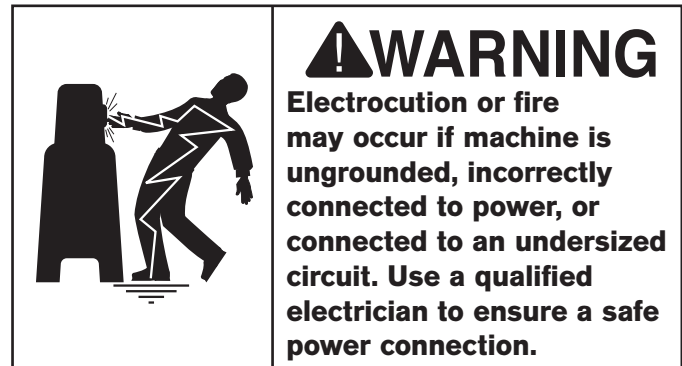


Figure 12. Installing stop rod.

5. Slide the work stop onto the work stop rod, position it as necessary, then tighten the leaf screw.

Power Connection



Once your machine is set up and assembled as previously described in this manual, it is ready to be connected to the power source.

- If you plan to use the machine at 110V, simply plug it into a receptacle on a 110V circuit that meets the requirements listed on **Page 10**.
- If you plan to use the machine at 220V, you will have to convert the machine for 220V. Refer to **Electrical**, beginning on **Page 41**.

Test Run

After all preparation steps have been completed, the machine and its safety features must be tested to ensure correct operation. If you discover a problem with the operation of the machine or its safety components, do not operate it further until you have resolved the problem.

Note: Refer to **Troubleshooting on Page 35** for solutions to common problems that may occur with metal-cutting bandsaws. If you need additional help, contact our Tech Support at (360) 734-1540.

To test run your machine:

1. Read and follow the safety instructions at the beginning of the manual, take the required safety precautions, and make sure the machine is assembled set up properly.
2. Clear away all tools and objects used during assembly and preparation.
3. Open the downfeed valve (**Figure 13**) and allow the headstock to travel all the way down. If the blade contacts the machine base, adjust the downfeed stop bolt.

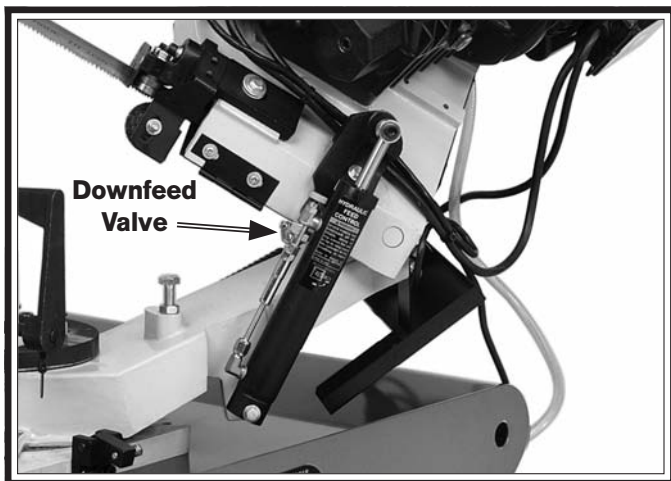


Figure 13. Downfeed valve.

4. Connect the machine to the power source.
5. Put on safety glasses and secure loose clothing or long hair.
6. Lift the headstock by the handle to the raised position, then close the downfeed valve to prevent it from lowering.
7. Start the bandsaw while keeping your finger near the ON/OFF switch at all times during the test run. The bandsaw should run smoothly with little or no vibration.
 - If you suspect any problems, immediately turn the bandsaw **OFF**, disconnect it from power, and correct the problem before continuing.
 - If you need any help with your bandsaw call our Tech Support at (360) 734-1540.

Inspections & Adjustments

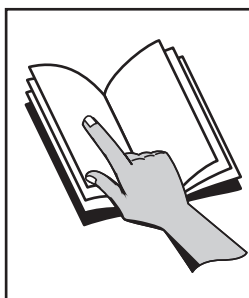
The following list of adjustments were performed at the factory before your machine was shipped. If you find that the adjustments are not set according to the procedures in this manual or your personal preferences, re-adjust them.

- Blade TrackingPage 38
- Blade Guide BearingsPage 39
- Squaring the BladePage 39

Operation Overview

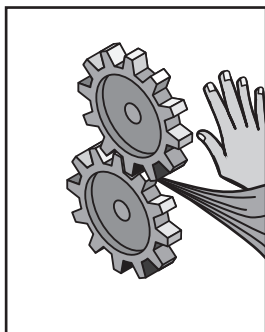
The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so they can more easily understand the controls discussed later in this manual.

Note: Due to the generic nature of this overview, it is not intended to be an instructional guide for performing actual machine operations. To learn more about specific operations and machining techniques, seek training from people experienced with this type of machine, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.



!WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.



!WARNING

Loose hair, clothing, or jewelry could get caught in machinery and cause serious personal injury. Keep these items away from moving parts at all times to reduce this risk.



!WARNING

During operation, small metal chips may become airborne, leading to serious eye injury. Wear safety glasses to reduce this risk.

To complete a typical cutting operation, the operator does the following:

1. Examines the workpiece to make sure it is suitable for cutting.
2. Checks/adjusts the V-belt position on the pulleys to ensure the correct cutting speed for the workpiece.
3. Raises the headstock, then closes the downfeed valve.
4. Adjusts the headstock angle for the type of cut, then securely clamps the workpiece in the vise.
5. Adjusts the guide post to within 1" of the workpiece, and verifies that the blade is properly tensioned.
6. Adjusts the downfeed rate adjust knob for the correct feed rate.
7. Makes sure the workpiece and bandsaw are stable and that there are no obstructions in the way of the cut.
8. Puts on safety glasses.
9. Starts the bandsaw and waits for the blade to reach full speed.
10. Opens the downfeed valve to lower the head and blade into the workpiece, then allows the bandsaw to complete the cut.
11. Once the bandsaw has stopped, raises the head, and removes the workpieces.

Description of Controls & Components

Refer to **Figure 14** and the following descriptions to become familiar with the basic controls and components used to operate this machine.

- A. Blade Tension Knob:** Adjusts the position of the upper blade wheel to apply or release blade tension.
- B. Guide Post Knob:** Locks the guide post in the position set by the operator.
- C. ON/OFF Switch:** Turns the saw motor ON & OFF.
- D. Speed Selector:** Selects one of three blade speeds.
- E. Downfeed Rate Adjust Knob:** Controls the speed at which the blade lowers into the workpiece.
- F. Downfeed Valve:** Controls the starting and stopping of the headstock downfeed.
- G. Downfeed Stop Bolt:** Adjusts to determine the absolute bottom limit of blade travel.
- H. Headstock 0° Flip Stop:** Provides an optional stop for square cuts.
- I. Headstock 45° Stops:** Provide stops at 45° to the left and right for angle cuts.
- J. Vise Jaw Handwheel:** Controls the vise jaw movement.
- K. Vise Jaw Quick Release Lever:** Quickly opens and closes the vise jaw approximately $\frac{1}{16}$ " for repetitive repositioning/clamping in a production setting.
- L. Headstock Lock Lever:** Locks the headstock at the position set by the operator.
- M. Work Stop:** Provides an adjustable stop for cutting multiple workpieces at the same length.

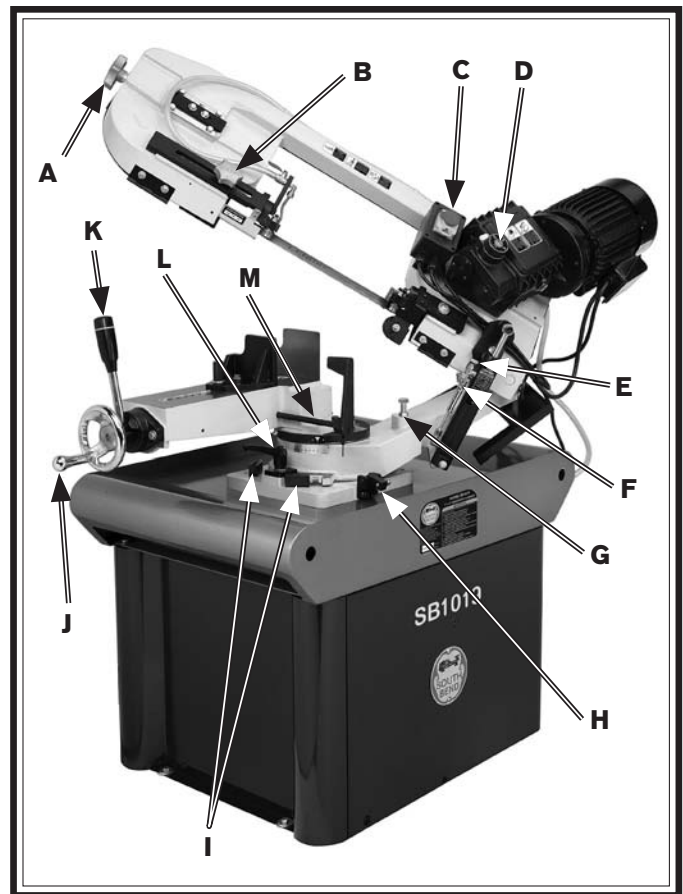


Figure 14. Controls and components.

Blade Selection

Selecting the right blade for the cut requires a knowledge of various blade characteristics. This section breaks down blade characteristics to help the reader make an informed decision about what blade to use for a given operation.

Blade Terminology

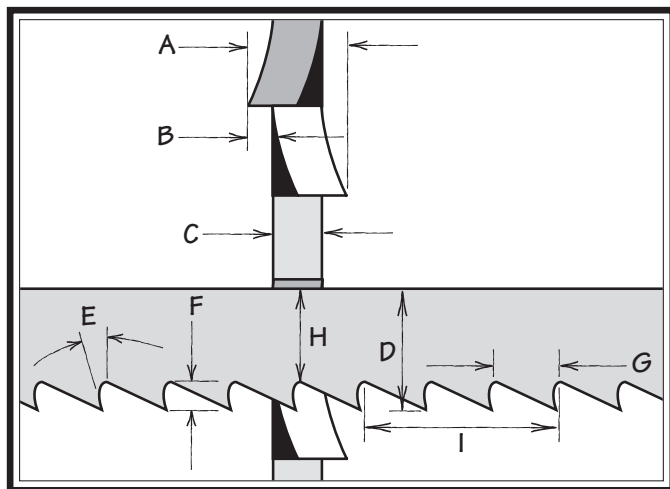


Figure 15. Bandsaw blade terminology.

- A. Kerf:** The width of the cut made during operation.
- B. Tooth Set:** The distance each tooth is bent left or right from the blade.
- C. Gauge:** The thickness of the blade.
- D. Blade Width:** The widest point of the blade measured from the tip of the tooth to the back edge of the blade.

- E. Tooth Rake:** The angle of the tooth face from a line perpendicular to the length of the blade.
- F. Gullet Depth:** The distance from the tooth tip to the bottom of the curved area (gullet).
- G. Tooth Pitch:** The distance between tooth tips.
- H. Blade Back:** The distance between the bottom of the gullet and the back edge of the blade.
- I. Blade Pitch or TPI:** The number of teeth per inch measured from gullet to gullet.

Blade Length

Measured by the blade circumference, blade lengths are usually unique to the brand of your bandsaw and the distance between the wheels.

Model	Blade Length
SB1019.....	93"

Blade Width

Measured from the back of the blade to the tip of the blade tooth (the widest point), blade width is often the first consideration given to blade selection. Blade width dictates the largest and smallest curve that can be cut, as well as how accurately it can cut a straight line—generally the wider the blade, the straighter it will cut.

Model	Blade Width
SB1019.....	$\frac{3}{4}$ "

Tooth Set

Three common tooth sets are alternate, wavy, and raker (see **Figure 16**). Each removes material in a different manner to make the kerf in the workpiece.

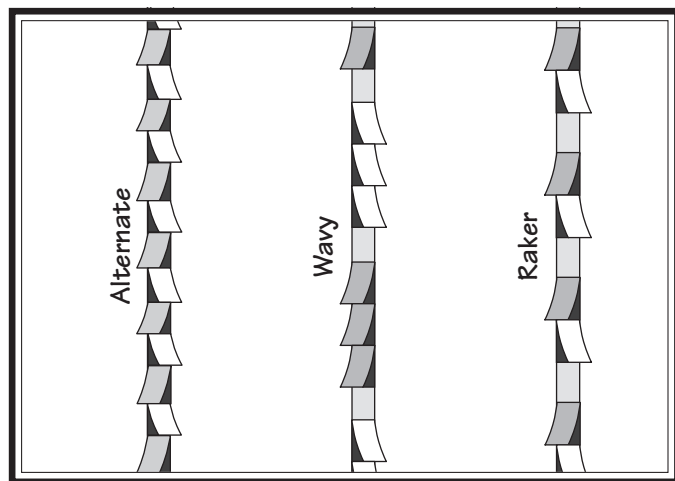


Figure 16. Bandsaw blade tooth sets.

Alternate: An all-purpose arrangement with teeth bent evenly left and right of the blade. Generally used for milder metals.

Wavy: Generally three or more teeth in a group that are bent one way, followed by a non-set tooth, and then a group bent the other way. Recommended for straight cuts in thin metals or thin-wall tubing.

Raker: Three teeth in a recurring group—one bent left, next one bent right, and then a non-set tooth. The raker set is ideal for most contour cuts.

Tooth Type

The most common tooth types are described below and illustrated in **Figure 17**. Each removes, gathers, and expels material differently.

Standard or Raker: Equally spaced teeth set at a "0" rake angle. Recommended for all purpose use.

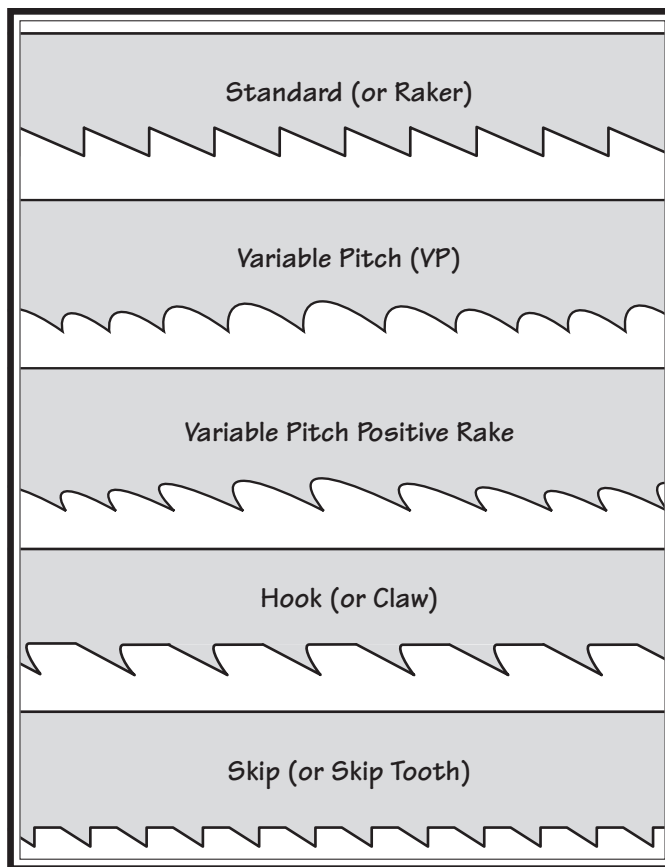


Figure 17. Bandsaw blade tooth types.

Variable Pitch (VP): Varying gullet depth and tooth spacing, a "0" rake angle, excellent chip removing capacity, and smooth cutting.

Variable Pitch with Positive Rake: Varying gullet depth and tooth spacing, a positive rake angle, better chip formation, and aggressive cutting.

Hook or Claw: Wide gullets (round or flat), equally spaced teeth, positive rake angle, and fast cut with good surface finish.

Skip or Skip Tooth: Wide, flat gullets, a "0" rake angle, equally spaced teeth, and recommended for non-ferrous materials.

Blade Pitch (TPI)

The chart below is a basic starting point for choosing teeth per inch (TPI) for variable pitch blades and standard raker set bi-metal blades/HSS blades. However, for exact specifications of bandsaw blades that are correct for your operation, contact the blade manufacturer.

To select the correct blade pitch:

1. Measure the material thickness. This measurement is the distance from where each tooth enters the workpiece to where it exits the workpiece.
2. Refer to the "Material Width/Diameter" row of the blade selection chart in **Figure 18**, and read across to find the workpiece thickness you need to cut.

3. Refer to the "Material Shapes" row and find the shape of the material to be cut.
4. In the applicable row, read across to the right and find the box where the row and column intersect. Listed in the box is the minimum TPI recommended for the variable tooth pitch blades.
5. The "Cutting Speed Rate Recommendation" section of the chart offers guidelines for various metals, given in feet per minute (FPM). Choose the speed closest to the number shown in the chart.

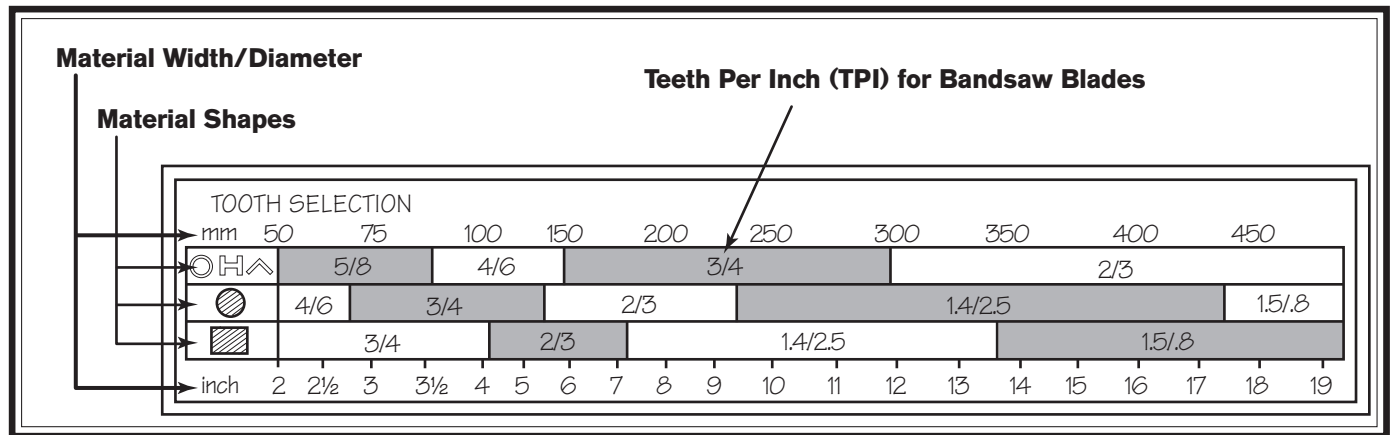


Figure 18. General guidelines for blade selection and speed chart.

Blade Changes

Change blades when they become dull, damaged, or if the operation requires a different type of blade.

To change the blade:

1. DISCONNECT BANDSAW FROM POWER!
2. Raise the headstock, then remove the wheel access cover.
3. Loosen the tension knob and slip the blade off of the wheels.
4. Scrape any buildup or debris off the wheels.
5. Install the new blade through both blade guide bearings, as shown in **Figure 19**, and around the bottom wheel.

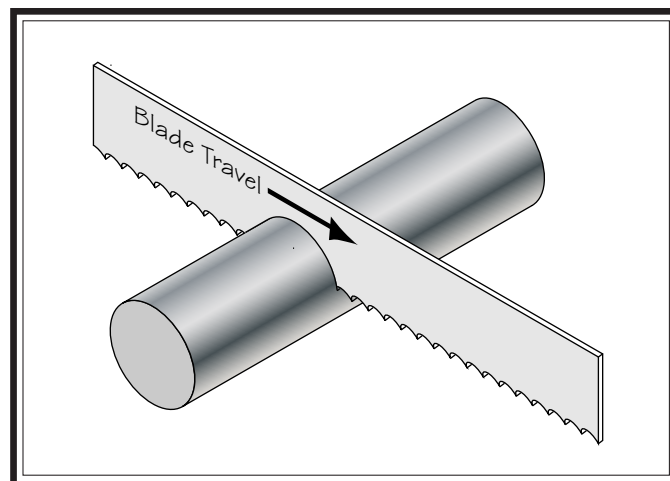


Figure 20. Blade cutting direction.

7. When the blade is around both wheels, adjust the position so the back of the blade is against the wheel shoulder, as shown in **Figure 21**.

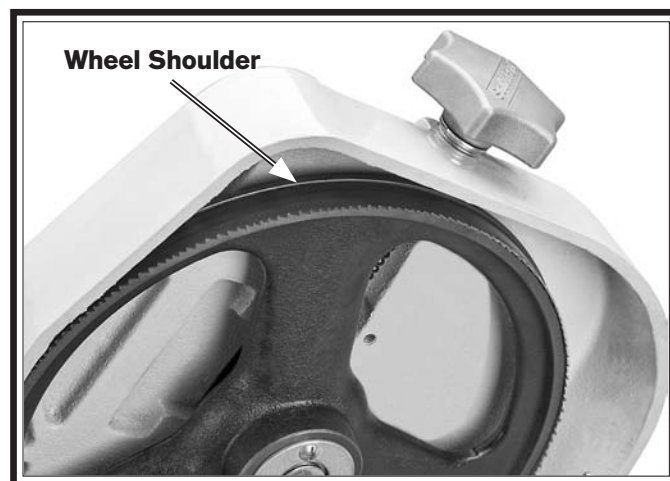


Figure 21. Typical blade/wheel position.

8. Tighten the tension knob so the blade will not slip on the wheels upon startup.
9. Connect the bandsaw to the power source.
10. Briefly turn the bandsaw **ON** then **OFF** to position the blade and resume the previous tracking.

— If the tracking needs to be adjusted, see **Blade Tracking on Page 38**.

— If the tracking is fine, proceed to **Blade Tension on Page 25**.

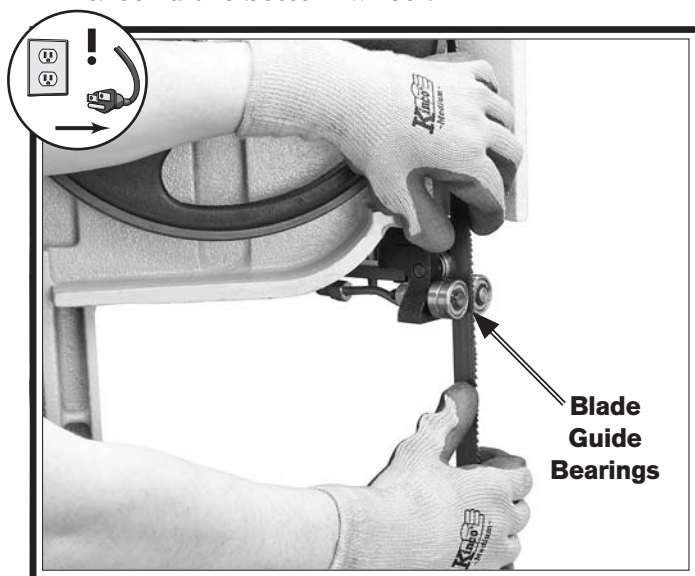


Figure 19. Typical blade installation.

6. Hold the blade around the bottom wheel with one hand and slip it around the top wheel with the other hand, keeping the blade between the blade guide bearings.

Note: It is sometimes possible to flip the blade inside out, in which case it will be installed in the wrong direction. Check to make sure the blade teeth are facing toward the workpiece, as shown in **Figure 20**, after installing it on the bandsaw. Some blades will have a directional arrow you can use as a guide.

Blade Tension

Proper blade tension is essential to avoid blade vibration, twist, or wheel slippage. A correctly tensioned blade provides long life, straight cuts, and efficient cutting.

The three major signs of incorrect blade tension are: 1) The blade stalls in the cut and slips on the wheels, 2) the blade frequently breaks, and 3) the bandsaw does not make straight cuts.

To tension the blade on the bandsaw:

1. Make sure the blade is tracking properly.
2. DISCONNECT BANDSAW FROM POWER!
3. Loosen and slide the blade guide as far out as it will go, then tighten it down again.
4. Turn the tension knob in **Figure 22** clockwise to tighten the blade or clockwise to loosen the blade.

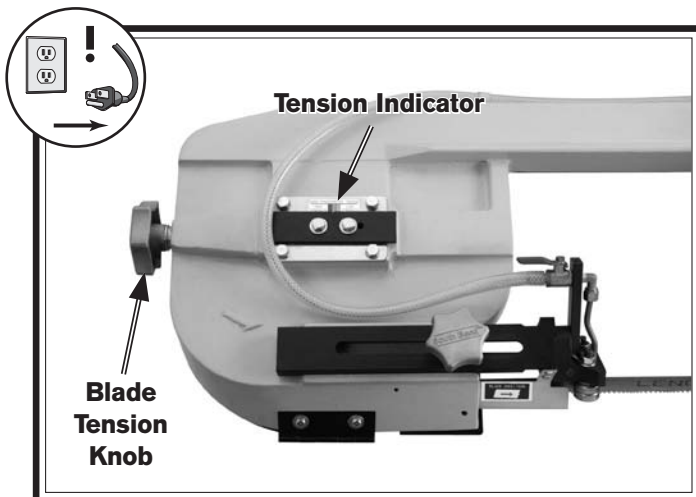


Figure 22. Adjusting blade tension.

5. Tighten the blade until the tension indicator moves into the green or center section of the indicator.

Blade Breakage

Many conditions may cause a bandsaw blade to break. Some of these conditions are unavoidable and are the natural result of the stresses placed on the bandsaw; other causes of blade breakage are avoidable.

The most common causes of avoidable blade breakage are:

- Faulty alignment or adjustment of the blade guides.
- Forcing or twisting a wide blade around a tight radius.
- Feeding the workpiece too fast.
- Dull or damaged teeth.
- Over-tensioned blade.
- Top blade guide assembly set too high above the workpiece. Adjust the top blade guide assembly so that there is approximately $\frac{1}{8}$ "– $\frac{1}{4}$ " between the bottom of the assembly and the workpiece. Understand that with smaller workpieces, this may not be possible. In these cases, simply adjust the blade guide as far down as possible.
- Using a blade with a lumpy or improperly finished braze or weld.
- Continuously running the bandsaw between operations.
- Leaving the blade tensioned when not in use.
- Using the wrong blade pitch (TPI) for the workpiece thickness. The general rule of thumb is to have no fewer than three teeth in contact with the workpiece when starting a cut and at all times during cutting.
- Air in the hydraulic system, causing the headstock to "hop" on the workpiece.
- Stacking workpieces for multiple cuts at once.

Blade Care & Break-In Blade Speed

Blade Care

To prolong blade life, always use a blade with the proper width, set, type, and pitch for each application. Maintain the appropriate feed rate, feed pressure, and blade speed and pay attention to the chip characteristics (Refer to the **Chip Inspection Chart** on **Page 27**). Keep your blades clean, since dirty or gummed up blades pass through the cutting material with much more resistance than clean blades, causing unnecessary heat.

Blade Break-In

The tips and edges of a new blade are extremely sharp. Cutting at too fast of a feed rate or too slow of a blade speed can fracture these tips and edges, quickly dulling the blade. Properly breaking-in a blade allows these sharp edges to wear without fracturing, thus keeping the blade sharp longer. Below is a typical break-in procedure. When using aftermarket blades, refer to the manufacturer's break-in procedure to keep from voiding the warranty.

Use the **Chip Inspection Chart** on **Page 27** as a guide to evaluate the chips and ensure that the optimal blade speed and feed rate are being used.

To properly break-in a new blade:

1. Choose the correct speed for the blade and material of the operation.
2. Reduce the feed pressure by half for the first 50–100 in² of material cut.
3. To avoid twisting the blade when cutting, adjust the feed pressure when the total width of the blade is in the cut.

The three-speed gearbox on the model SB1019 produces three blade speeds: 135, 197, and 256 FPM. During operation, pay attention to the chips being produced from the cut and compare them to the **Chip Inspection Chart** on **Page 27** to properly set the downfeed rate.

NOTICE

DO NOT change speeds when the motor is running. Wait for the bandsaw to come to a complete stop or you will damage the gears and you will void your warranty.

To change blade speeds:

1. Turn the bandsaw **OFF** and allow it to come to a complete stop.
2. Determine the best speed for your cut. The table in **Figure 24** on **Page 27** is provided as a rough guideline. Material thickness, type of blade used and if cutting fluid is used, will factor into the correct speed selection. As a general rule, add 15% when using cutting fluid.
3. With the saw turned **OFF**, rotate the speed control knob (**Figure 23**) to the desired position.



Figure 23. Speed control knob.

Blade Speed Chart

The chart in **Figure 24** offers blade speed guidelines for various metals, given in feet per minute (FPM) and meters per minute (M/Min). Choose the closest available speed on the machine, then adjust the feed rate as necessary, using the **Chip Inspection Chart** as a guide.

Material	Speed FPM (M/Min)	Material	Speed FPM (M/Min)	Material	Speed FPM (M/Min)	Material	Speed FPM (M/Min)
Carbon Steel	196~354 (60) (108)	Tool Steel	203 (62)	Alloy Steel	111~321 (34) (98)	Free Machining Stainless Steel	150~203 (46) (62)
Angle Steel	180~220 (54) (67)	High-Speed Tool Steel	75~118 (25) (36)	Mold Steel	246 (75)	Gray Cast Iron	108~225 (33) (75)
Thin Tube	180~220 (54) (67)	Cold-Work Tool Steel	95~213 (29) (65)	Water Hardened Tool Steel	242 (75)	Ductile Austenitic Cast Iron	65~85 (20) (26)
Aluminum Alloy	220~534 (67) (163)	Hot-Work Tool Steel	203 (62)	Stainless Steel	85 (26)	Malleable Cast Iron	321 (98)
Copper Alloy	229~482 (70) (147)	Oil-Hardened Tool Steel	203~213 (62) (65)	CR Stainless Steel	85-203 (26) (62)	Plastics	220 (67)

Figure 24. Dry cutting blade speed chart.

Chip Inspection Chart

The best method for choosing the cutting speed and feed rate for a cutting operation is to inspect the chips created by the cut. Refer to the chip inspection chart below to evaluate chip characteristics and determine whether to adjust feed rate/pressure, blade speed, or both.









Chip Appearance	Chip Description	Chip Color	Blade Speed	Feed Rate/ Pressure	Other Actions
	Thin & Curled	Silver	Good	Good	
	Hard, Thick & Short	Brown or Blue	Increase	Decrease	
	Hard, Strong & Thick	Brown or Blue	Increase	Decrease	
	Hard, Strong, Curled & Thick	Silver or Light Brown	Good	Decrease Slightly	Check Blade Pitch
	Hard, Coiled & Thin	Silver	Increase	Decrease	Check Blade Pitch
	Straight & Thin	Silver	Good	Increase	
	Powdery	Silver	Decrease	Increase	
	Coiled, Tight & Thin	Silver	Good	Decrease	Check Blade Pitch

Figure 25. Chip inspection chart.

Downfeed Rate

Start and stop downfeed with the downfeed valve. The downfeed rate is adjusted by turning the downfeed rate adjust knob (Figure 26). Turning the knob clockwise decreases the downfeed rate and turning the knob counterclockwise increases the downfeed rate.

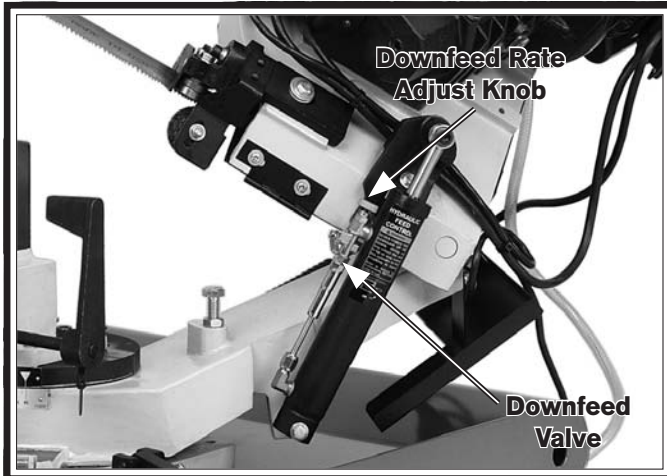


Figure 26. Downfeed pressure adjustment.

Downfeed Pressure

The downfeed pressure is controlled by the spring shown in Figure 27.

To decrease downfeed pressure, turn the hex nut clockwise to increase spring tension.

To increase downfeed pressure, turn the hex nut counterclockwise to release spring tension.

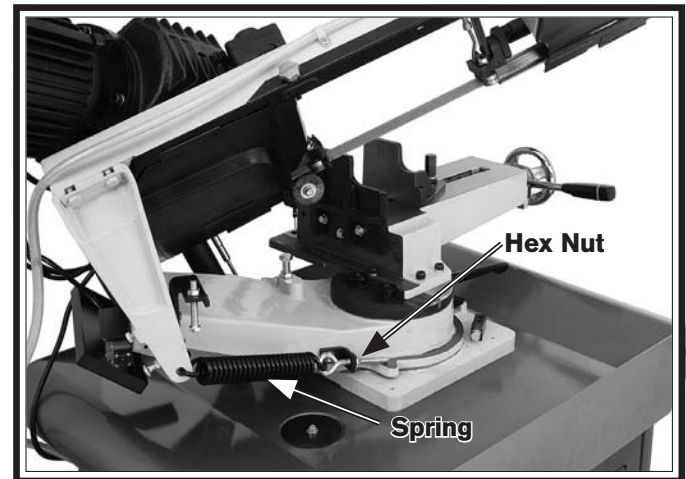


Figure 27. Downfeed rate adjustment.

Angle Cuts

The headstock can be swiveled to cut angles from 0–45° to the left and 0–45° to the right for a total swing of 90°. When making cuts to the right, the vise should remain in the left position. If you need to make a cut to the left, you will have to move the vise to the right side of the machine.

Cuts to the Right

1. DISCONNECT BANDSAW FROM POWER!
2. Loosen the lock handle shown in **Figure 28**, then swivel the headstock to the desired angle, using the angle scale as a guide.

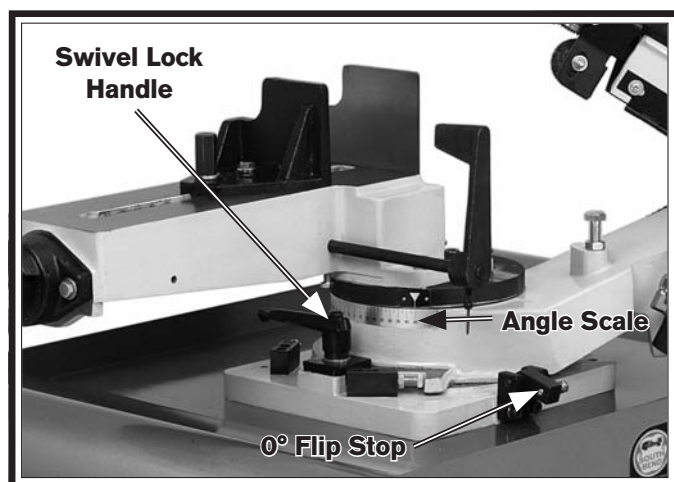


Figure 28. Swivel base.

3. Move the saw through its full range of motion to make sure the blade will not contact the vise during operation, then tighten the swivel lock handle.

Cuts to the Left

1. DISCONNECT BANDSAW FROM POWER!
2. Rotate the 0° flip stop out of the way, as shown in **Figure 28**.
3. Lift the headstock to the upmost position, then close the downfeed valve to prevent it from lowering.

4. Remove the three cap screws that secure the vise to the machine base shown in **Figure 29**.

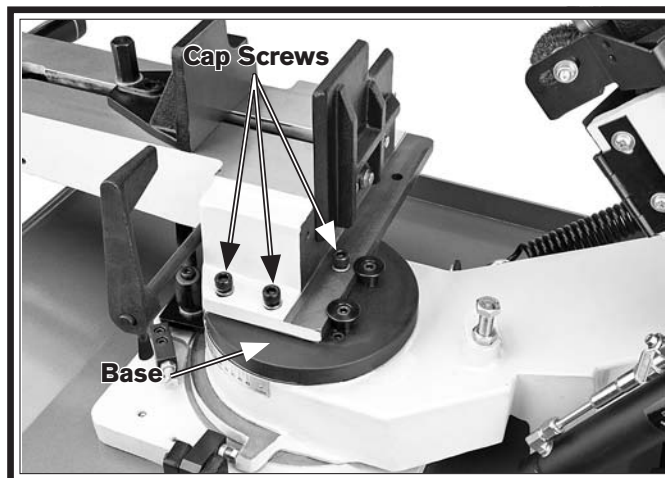


Figure 29. Moving vise.

5. Slide the vise to the right until it stops. Replace the cap screws that were removed in **Step 4** into the holes indicated in **Figure 30**. If needed, install the work stop on the left side of the vise.

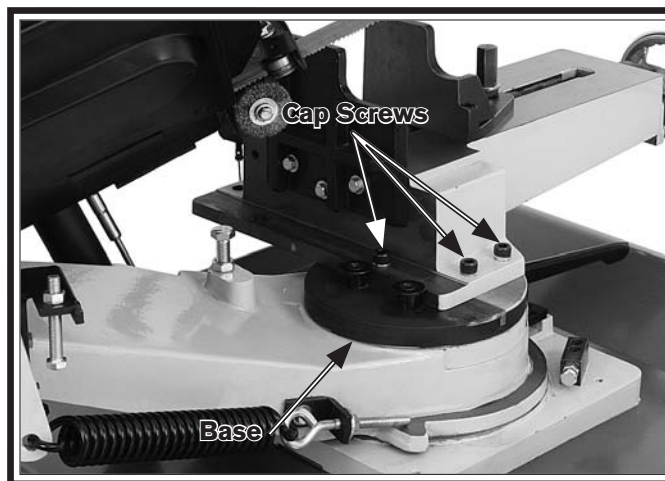


Figure 30. Securing vise.

6. Move the saw through its full range of motion to make sure the blade will not contact the vise during operation, then tighten the swivel lock handle.

Blade Guide

The upper blade guide should be positioned as close to the workpiece as possible for all cutting operations. The support provided by keeping the blade guides close ensures straight cuts by keeping the blade from twisting and drifting off the cut line.

To adjust the blade guide:

1. DISCONNECT BANDSAW FROM POWER!
2. Loosen the knob shown in **Figure 31** and slide the blade guide as close to the workpiece as possible, then re-tighten the knob.

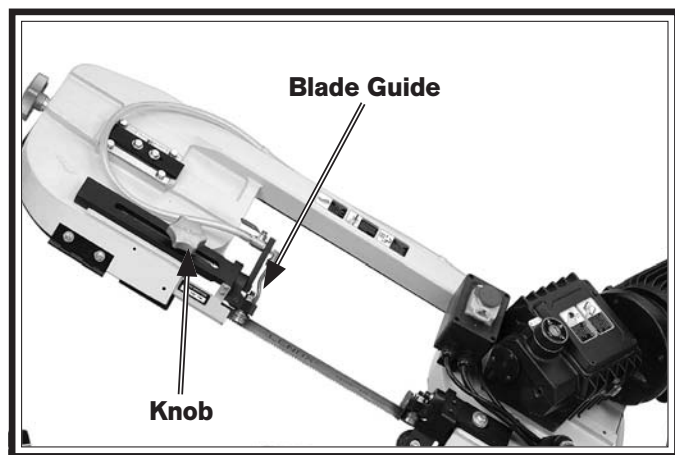


Figure 31. Blade guides.

Workpiece Holding

Figure 32 shows the correct methods for holding different workpiece shapes.

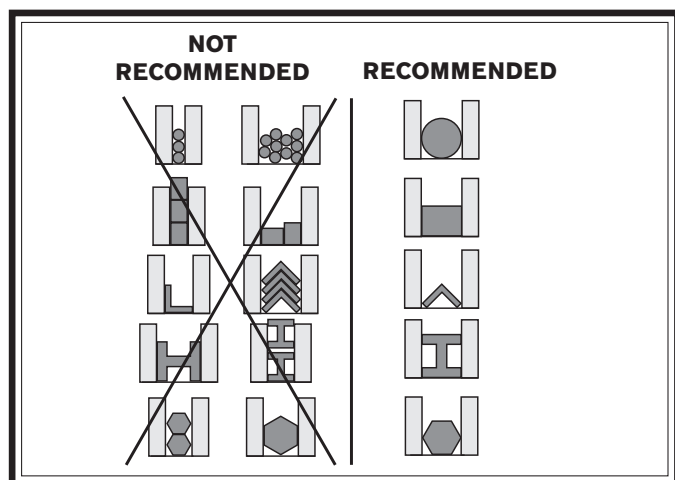


Figure 32. Workholding options by material shape.

Vise Quick Release

The Model SB1019 has a quick release lever (**Figure 33**) on the vise that allows the operator to quickly open and close the vise jaws for repetitive cuts in a production setting.

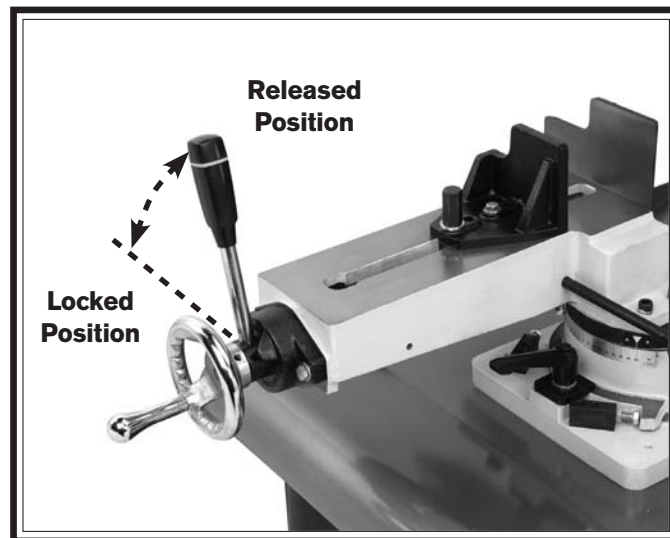


Figure 33. Vise quick release.

To use the vise quick release:

1. Open the vise sufficiently for the workpiece, then rotate the quick release lever to the locked position (fully counterclockwise).
2. Place the workpiece into the vise, then use the handwheel to securely clamp the workpiece.
3. Between cuts, rotate the quick release lever to the released position (fully clockwise) to release the workpiece.

NOTICE

If you use the vise without the quick release function, make sure you keep the quick release lever in the locked position to prevent it from interfering with the headstock during operation.

Cutting Fluid



While simple in concept and function, many issues must be taken into account to find and use the correct cutting fluid. Always follow all product warnings and contact the fluid manufacturer for unanswered questions.

Use the information below as a guideline to choose the appropriate cutting fluid. Always refer to the cutting fluid manufacturer for specific application and safety information:

- For cutting low alloy, low carbon, and general-purpose category metals with a bi-metal blade—use a water soluble cutting fluid.
- For cutting stainless steels, high carbon, and high alloy metals, brass, copper and mild steels—use "Neat Cutting Oil" (commonly undiluted mineral oils) that have extreme pressure additives (EP additives).
- For cutting cast iron, cutting fluid is not recommended.

Remember: Too much flow at the cutting fluid nozzle will make a mess and can make the work area unsafe; and not enough fluid at the cut will heat the blade, causing the blade teeth to load up and break.

Tip: Using a refractometer or hydrometer to replenish water in water-based coolant can extend the life of blades and coolant, and ensure consistent cutting results.

	<p>!WARNING BIOLOGICAL & POISON HAZARD!</p> <p>Use the correct personal protection equipment when handling cutting fluid. Follow federal, state, and fluid manufacturer requirements for proper disposal.</p>
	

Cutting Fluid System

This bandsaw has a built-in cutting fluid system that extends the life of your bandsaw blades by lowering the temperature of the blade and workpiece and washing away chips.

To use the cutting fluid system:

1. Thoroughly clean and remove any foreign material that may have fallen inside the reservoir during shipping.
2. Place the filter screen and drain tube in the reservoir as shown in **Figure 34**.

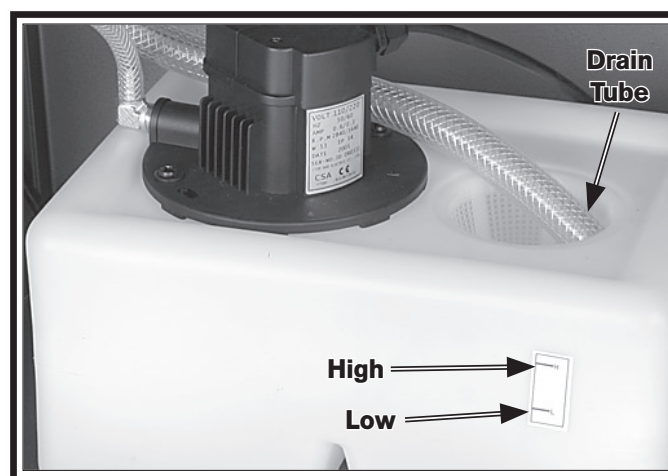



Figure 34. Filter screen and hose.

3. Fill the reservoir to the "high" mark with your chosen cutting fluid solution.

	<p>!WARNING</p> <p>Magnesium fires are extremely dangerous! When cutting magnesium, always use a cutting fluid intended for this type of metal and carefully follow the fluid manufacturer's recommendations.</p>
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4. Adjust the valve on the coolant hose to control the flow of coolant (see **Figure 35**). Make sure that the pressure is not so high that coolant spills on the floor and creates a slipping hazard.

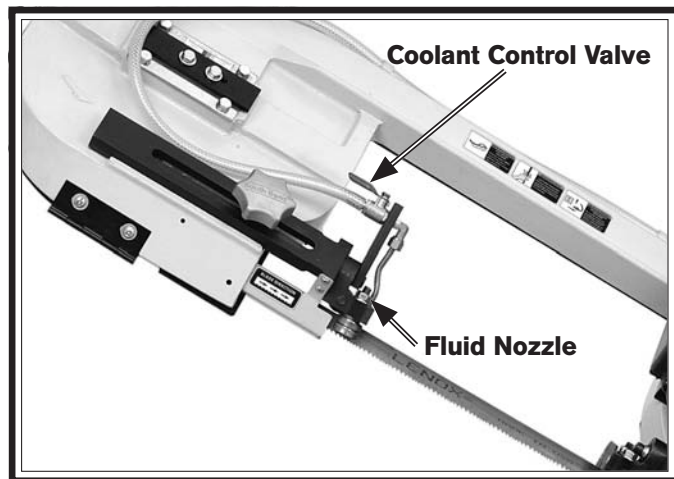


Figure 35. Coolant control valve.

NOTICE

Keep the tray chip screen clear so coolant can recycle to the pump reservoir. **NEVER** operate the pump with the reservoir below the low mark or you may over-heat the pump and void your warranty!

Operation Tips

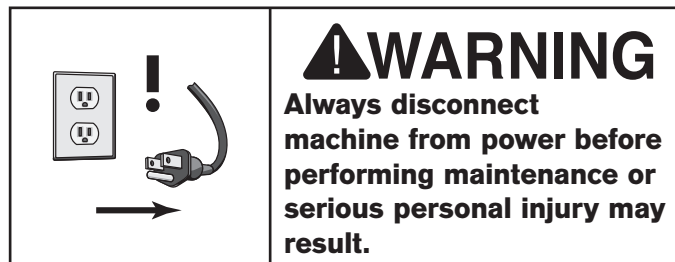
Review the following tips to help you safely and effectively operate your bandsaw and get the maximum life out of your saw blades.

- Use the work stop to quickly and accurately cut multiple pieces of stock to the same length.
- Let the blade reach full speed before engaging the workpiece. Never start a cut with the blade in contact with the workpiece.
- Pay attention to the chips produced by the cutting operation and use their appearance to fine-tune the blade speed, feed speed, and pressure (refer to the **Chip Inspection Chart** on **Page 27**).
- Wait until the blade has completely stopped before removing the workpiece from the vise, and avoid touching the cut end—it could be very hot!

NOTICE

Release blade tension at the end of each use to prolong blade life.

Maintenance Schedule Lubrication



For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

Daily

- Check/correct loose mounting bolts.
- Check/correct damaged or dull saw blade.
- Check/correct worn or damaged wires.
- Clean/protect table.
- Clean metal chips from upper and lower wheel areas, and empty the chip chute.
- Correct any other unsafe condition.

Monthly

- Check for V-belt tension, damage, or wear.
- Lubricate all components outlined in this section, with the exception of the gearbox.

Yearly

- Lubricate gearbox.

Cleaning

Use a brush and a shop vacuum to remove chips and other debris from the machine. Keep the non-painted surfaces rust-free with regular applications of a high-quality rust preventative.

Periodically, remove the blade and thoroughly clean all metal chips or built-up grease from the wheel surfaces and blade housing.

Before applying lubricant to any area, wipe the area clean for best results.

Lubricate the following areas:

- Blade Tension Mechanism:** Open the main blade guard, then brush white lithium grease on the tension knob lead screw.
- Blade and Guides:** Drop a few drops of light machine oil on the blade and the blade guides daily.
- Gear Box:** Change the gear oil annually.
- Table and Machined Surfaces:** Keep bare metal surfaces rust-free with regular applications of a quality way oil.
- Vise Leadscrew:** Clean the leadscrew, then apply a thin coat of grease as needed.

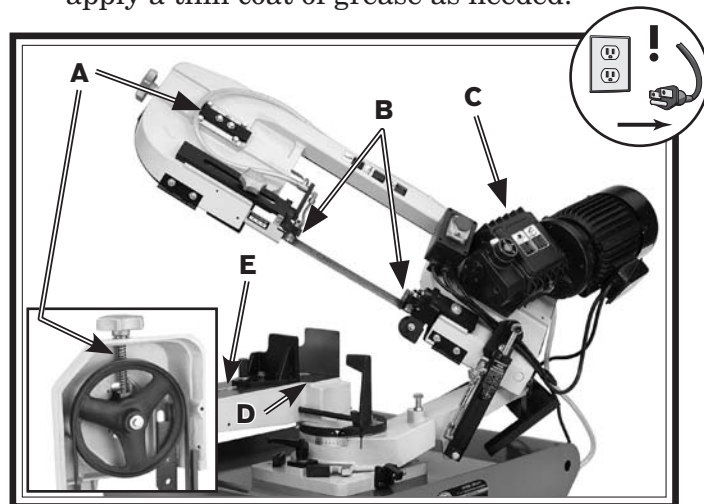


Figure 36. Lubrication points.

Gearbox

Items Needed

	Qty
Wrench 4mm	1
Mobilgear 600 XP 680 or ISO 680 Equivalent Gear Oil (non-corrosive to brass)	Approximately 1 Pint
Drain Pan	1
Shop Rags	As needed
Wooden Blocks	As needed

To change the gearbox oil:

1. DISCONNECT BANDSAW FROM POWER!
2. Fully raise the headstock and close the downfeed knob to lock it in position, then loosen the gearbox fill plug (**Figure 37**).



Figure 37. Gear box lubrication.

3. Place the drain pan under the drain plug, then remove the drain plug to drain the oil.
4. Replace the drain plug, lower the headstock, then add oil through the fill plug hole until the oil level is to the center of the sight glass.
5. Replace the fill plug.

Machine Storage

All machinery will develop serious rust problems and corrosion damage if it is not properly prepared for storage. If decommissioning this machine, use the steps in this section to ensure that it remains in good condition.

To prepare your machine for storage or decommission it from service:

1. DISCONNECT BANDSAW FROM POWER!
2. Thoroughly clean all unpainted, bare metal surfaces, then coat them with a light weight grease or rust preventative. Take care to ensure these surfaces are completely covered but that the grease or rust preventative is kept off of painted surfaces.

If the machine will be out of service for only a short period of time, use a quality medium-weight machine oil (not auto engine oil) in place of the grease or rust preventative.

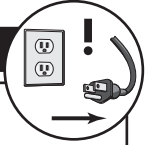
3. Remove the blade so it does not stretch or rust while the machine is stored.
4. If the machine will be out of service for only a short period of time, start the machine once every 2–3 months and run it in each speed for a few minutes. This will put a fresh coat of gear oil on the gearing components inside the gearbox.

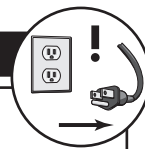
If it will be out of service for a long period of time, drain, then completely fill the gearbox with the recommended gear oil so components above the normal oil level do not develop rust. (Make sure to put a tag on the controls as a reminder for the re-commissioning process to adjust the gear oil level before starting the machine.)

5. Completely cover the machine with a tarp or plastic sheet that will keep out dust and resist liquid or moisture. If machine will be stored in/near direct sunlight, use a cover that will block the sun's rays.

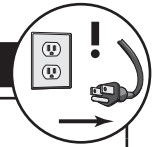
If you need replacement parts, or if you are unsure how to do any of the solutions given here, feel free to call us at (360) 734-1540.

Symptom	Possible Cause	Possible Solution
Machine does not start.	<ol style="list-style-type: none"> 1. Power supply switched off/has incorrect voltage. 2. Blown fuse/tripped circuit breaker at main panel. 3. Plug or receptacle is corroded or mis-wired. 4. Break or short in wiring; or loose connections. 5. Motor wired incorrectly. 6. Motor ON/OFF switch at fault. 7. Start capacitor blown or at fault. 8. Centrifugal switch at fault. 9. Motor at fault. 	<ol style="list-style-type: none"> 1. Switch power supply on/verify voltage. 2. Correct the cause of overload, then reset/replace fuse or breaker. 3. Clean/retighten contacts; correct the wiring. 4. Trace/replace broken or corroded wires; fix loose connections. 5. Wire motor correctly (refer to inside junction box cover or manual). 6. Replace switch. 7. Replace start capacitor. 8. Adjust/replace centrifugal switch. 9. Test for shorted windings, bad bearings and repair or replace.
Main motor chatters during startup or during operation.	<ol style="list-style-type: none"> 1. Extension cord (if used) is causing voltage drop. 2. Power supply has incorrect voltage on one or more legs. 	<ol style="list-style-type: none"> 1. Move machine closer to the power source or use a larger gauge or shorter extension cord. 2. Contact your power company to fix the power supply.
Machine has excessive vibration or noise.	<ol style="list-style-type: none"> 1. Blade is missing teeth. 2. Guide post is loose. 3. Motor or table is loose. 4. Machine incorrectly mounted on floor. 5. Centrifugal switch out of adjustment; at fault. 6. Air is in the hydraulic system, causing the headstock to "hop". 7. Motor bearings worn or damaged. 8. Wheel bearings are worn. 	<ol style="list-style-type: none"> 1. Replace blade (Page 24). 2. Tighten the guide post. 3. Tighten any loose fasteners. 4. Level/shim base; tighten/adjust mounting hardware or feet. 5. Adjust/replace centrifugal switch. 6. Bleed hydraulic system. 7. Replace motor bearings or replace motor. 8. Replace wheel bearings.





Symptom	Possible Cause	Possible Solution
<p>Motor stalls or slows when operating.</p>	<ol style="list-style-type: none"> 1. Too much pressure when feeding workpiece. 2. Workpiece is warped and binding blade. 3. Blade is dull, wanders, and gets pinched in the cut. 4. Blade is loose. 5. Blade is loading up. 6. Blade is not correct for material being cut. 7. Motor overheated. 8. Motor wired incorrectly. 9. Motor at fault. 	<ol style="list-style-type: none"> 1. Reduce pressure when feeding workpiece. 2. Fabricate a jig for better workpiece control. 3. Replace blade, adjust guides and tracking. 4. Clean wheels and increase blade tension. 5. Install a blade with more suitable TPI or different style of teeth. 6. Use the correct blade for the operation. Refer to Blade Selection section beginning on Page 21. 7. Let cool, clean motor, and reduce workload. 8. Review wiring diagram on motor cover; correct wire connections. 9. Test for shorted windings, bad bearings and repair or replace.
<p>Workpiece angle incorrect or out of square.</p>	<ol style="list-style-type: none"> 1. Scale not calibrated or loose vise. 2. Table guide post is loose or out of alignment. 	<ol style="list-style-type: none"> 1. Zero fence to blade and realign scale. Tighten any loose fasteners. 2. Tighten any loose hardware or lock levers. Align the guide post (see Page 39).
<p>Blade tracks incorrectly, slips on wheels, or comes off wheels.</p>	<ol style="list-style-type: none"> 1. Blade tension is too loose. 2. Incorrect blade for bandsaw. 3. Feed rate is too fast. 4. Blade guides need adjustment. 5. Blade is not tracking correctly. 6. Blade is bell-mouthed. 7. Blade is dull, wanders, and gets pinched in the cut. 8. Wheels are loaded with metal shavings. 9. The blade has insufficient support. 	<ol style="list-style-type: none"> 1. Increase blade tension (Page 25). 2. Install correct blade for machine (Page 24). 3. Reduce feed rate, or decrease blade TPI. 4. Adjust blade guides (Page 30). 5. Adjust blade tracking (Page 38). 6. Install new blade, and regularly remove tension from blade when not in use. 7. Replace blade, re-secure the workpiece from shifting. 8. Clean wheels. 9. Tighten the blade guide as close to the workpiece as possible.



Symptom	Possible Cause	Possible Solution
The cut is crooked, the blade wanders, cuts slow, or shows overheating on one side of the cut or the blade.	<ol style="list-style-type: none"> 1. The feed rate/pressure is too high. 2. Loose blade. 3. Blade is loading up. 4. Incorrect coolant mixture for workpiece/cut. 5. Blade installed backwards. 6. Dull blade; missing teeth. 7. Blade too wide for size of radius being cut. 8. The blade speed is wrong. 9. Blade tracking incorrectly. 	<ol style="list-style-type: none"> 1. Decrease the feed rate/pressure. 2. Keep blade properly tensioned (Page 25). 3. Install a blade with more suitable TPI or different style of teeth. 4. Use correct coolant mixture (refer to coolant manufacturer's recommended mixture). 5. Check blade rotation as described in "test run" and reverse blade if necessary. 6. Replace blade (Page 24). 7. Install a smaller width blade, or increase blade tension. 8. Adjust feed rate and cutting speed as required. 9. Adjust the blade tracking back to normal.
Blade dulls prematurely, or metal sticking to the blade.	<ol style="list-style-type: none"> 1. Blade is improperly broken in. 2. The blade gullets are loading up with chips. 3. The blade TPI is too fine for the workpiece, so the teeth load up and overheat. 4. Incorrect coolant mixture for workpiece/cut. 5. The workpiece has hard spots, welds, or scale. 	<ol style="list-style-type: none"> 1. Replace blade, and complete blade break in procedure. 2. Use a blade that has larger gullets to carry out material. 3. Use a coarser-tooth blade, adjust feed rate, adjust blade speed, make sure the brush is working. <p>Use correct coolant mixture (refer to coolant manufacturer's recommended mixture).</p> <ol style="list-style-type: none"> 5. Replace the blade with a special blade for cutting hardened materials.
Repetitive ticking noise coming from machine.	<ol style="list-style-type: none"> 1. Blade is missing teeth. 2. Blade weld contacting blade guides. 3. Blade weld may be failing. 	<ol style="list-style-type: none"> 1. Replace blade (Page 24). 2. Grind blade weld down smaller. 3. Cut and reweld the blade, or replace the blade.
Blade wears on one side or shows overheating.	<ol style="list-style-type: none"> 1. The blade guides are worn or mis-adjusted. 2. The blade support is inadequate. 3. Dull or incorrect blade. 4. Incorrect coolant mixture for workpiece/cut. 5. Blade is bell-mouthed. 	<ol style="list-style-type: none"> 1. Re-adjust or replace the blade guides. 2. Tighten the blade guide as close to the workpiece as possible. 3. Replace blade (Page 24). 4. Use correct coolant mixture (refer to coolant manufacturer's recommended mixture). 5. Install new blade.
Vibration when operating or cutting.	<ol style="list-style-type: none"> 1. Loose or damaged blade. 2. Worn wheel bearing. 3. Bent or dull blade. 4. Loose machine component. 5. Wheels worn or incorrectly installed. 6. Bandsaw blade wheel appears bent. 	<ol style="list-style-type: none"> 1. Tighten or replace blade. 2. Check/replace wheel bearing. 3. Replace blade (Page 24). 4. Tighten loose component. 5. Replace wheels. 6. Check and replace for bad wheel or bearing.

Blade Tracking

Blade tracking describes the way the blade rides on the bandsaw wheels. A properly tracking blade will ride within 1/16" of the wheel shoulder without touching it and will not wander back and forth when the blade is running. Blade tracking only needs to be adjusted if the blade rubs against the wheel shoulder or moves more than 1/16" away from the shoulder.

Tool Needed	Qty
Wrench or Socket 14mm.....	1

To adjust the blade tracking:

1. DISCONNECT BANDSAW FROM POWER!
2. Open the wheel access cover.
3. Loosen, but do not remove the lower hex bolt in the blade wheel tilting mechanism shown in **Figure 38**.

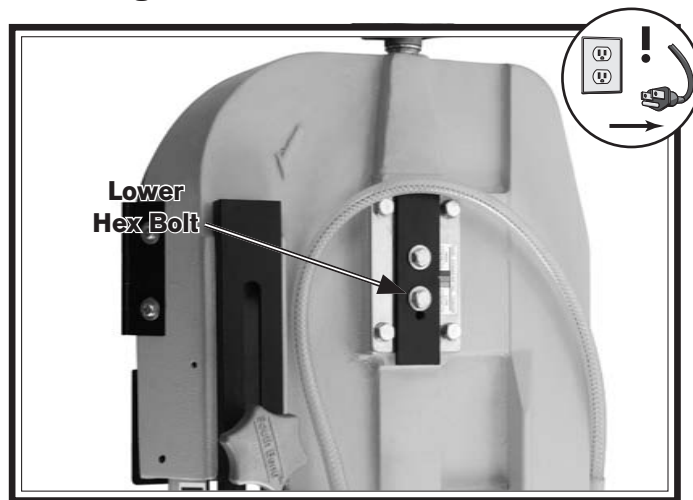


Figure 38. Blade tracking lower hex bolt.

4. Use the blade tension knob (shown in **Figure 39**) to release the blade tension.

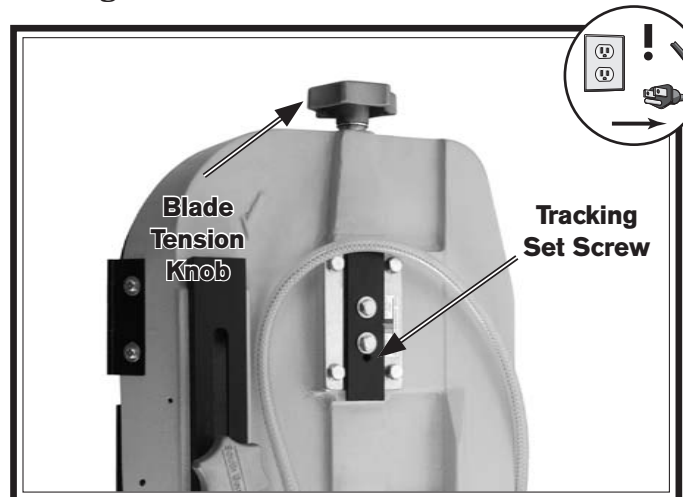


Figure 39. Blade tracking & tension controls.

5. Adjust the tracking set screw shown in **Figure 39**, then tighten the lower hex bolt loosened in **Step 3**.
 - Tightening the tracking set screw will move the blade closer to the shoulder of the wheel.
 - Loosening the tracking set screw will move the blade away from the shoulder.
6. Tension the blade.
7. Put the gearbox in neutral by moving the gear change knob between two of the speed positions and spin the wheel by hand.
 - If the blade tracks along the shoulder of the wheel (without rubbing), the blade is tracking properly and this adjustment is complete.
 - If the blade moves away from the shoulder of the wheel or hits the shoulder, repeat **Steps 3–7**.
8. Turn the bandsaw **OFF**, disconnect it from power, then replace the blade guard and wheel access cover.

Blade Guide Bearings

The blade guide bearings must support the blade correctly to make cuts that are perpendicular to the table surface. One bearing on each assembly has an eccentric shaft that can be adjusted to properly support the blade. The bearings are secured in place by a hex nut and lock washer, as shown in **Figure 40**.

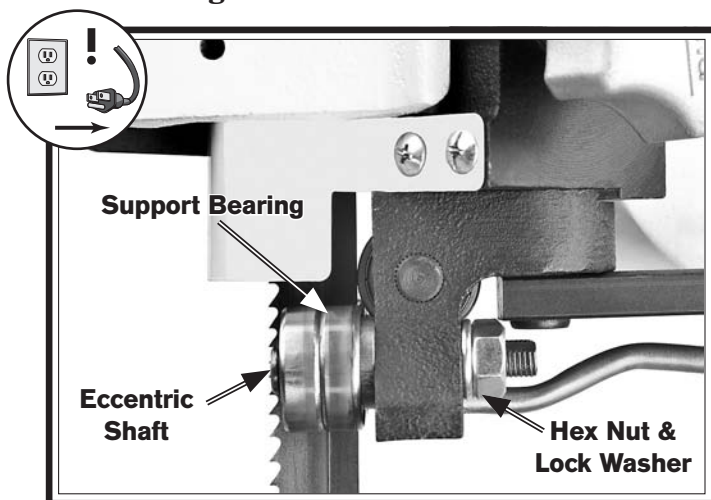


Figure 40. Blade guide adjustments.

To adjust the blade guide bearings:

1. DISCONNECT BANDSAW FROM POWER!
2. Lift the headstock and close the downfeed valve to stop it in the uppermost position.
3. Loosen the hex nuts that secure the eccentric shafts attached to the guide bearings.
4. Adjust the eccentric shaft as necessary so that it pushes against the blade just enough to hold the blade flat between the bearings.

Note: Since the bearings twist the blade into position, it is acceptable if there is 0.001"–0.002" gap between the blade and the front or back of the bearing. Just make sure not to squeeze the blade too tightly with the bearings. After the guide bearings are set, you should be able to rotate the guide bearings (although they will be stiff) with your fingers.

5. Adjust the support bearing in the same manner, but leave a gap between 0.002–0.003" from the back of the blade.

Squaring the Blade

A blade that is perpendicular to the table surface provides the best cutting results with minimal side loading and blade wear. Frequently check and adjust this setting.

To square the blade to the table:

1. DISCONNECT BANDSAW FROM POWER!
2. Separate the blade guides as far as possible, then lower the bandsaw all the way until it contacts the downfeed stop bolt.
3. Place a square on the table bed and against the edge of the blade, as shown in **Figure 41**, then check different points along the length of the table between the blade guides.

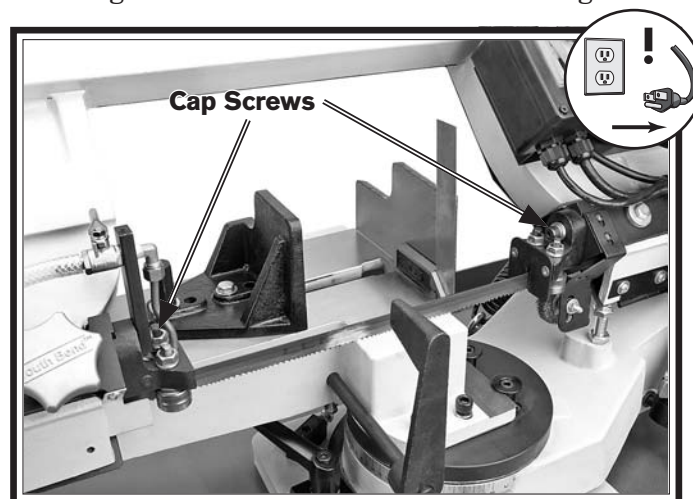


Figure 41. Squaring the blade.

4. If the blade is not square to the table, loosen the cap screws shown in **Figure 41** and rotate the blade guide bearing assemblies as necessary until the blade is perpendicular to the bed, then re-tighten the hex bolts.

Adjusting Angle Stops

The swivel base is equipped with three angle stops to provide quick adjustments to 45°L, 0°, and 45°R (Figure 42). If cuts made using these stops are not sufficiently accurate, the stops will need to be adjusted.

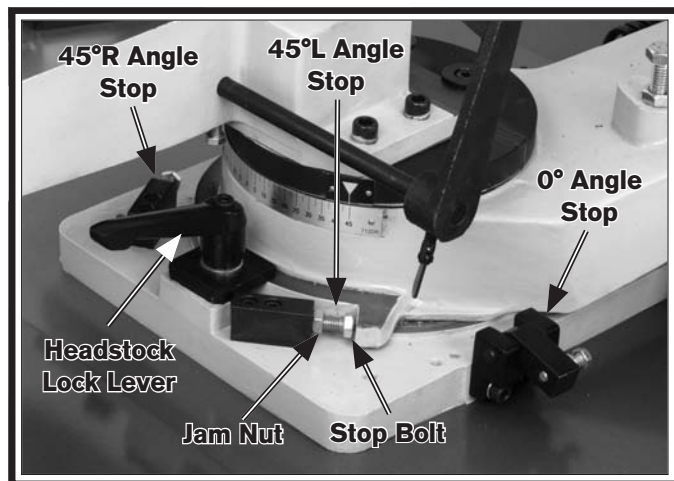


Figure 42. Angle stops.

To adjust the angle stops:

1. DISCONNECT BANDSAW FROM POWER!
2. Rotate the headstock to the right approximately 10°, engage the 0° angle stop by flipping it towards the vise, then rotate the headstock to the left until it stops against the 0° stop. Tighten the headstock lock lever.
3. Lower the headstock, then place a square flat on the table and against both the stationary jaw and the blade, as shown in Figure 43.

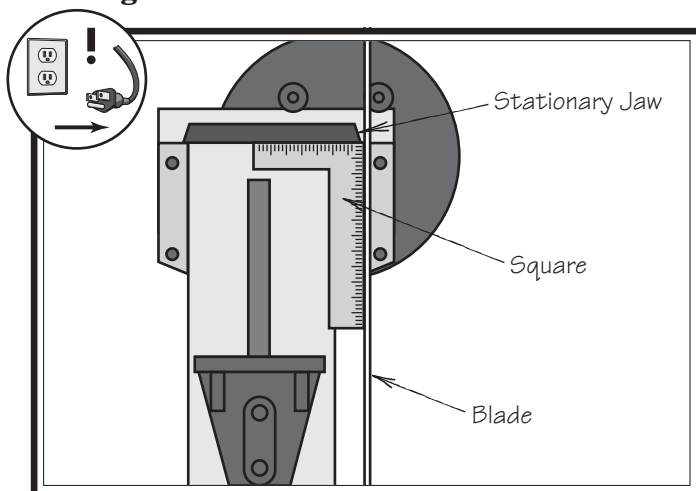


Figure 43. Testing vise/blade squareness.

4. If the square does not fit snugly against both the stationary jaw and the blade, loosen the jam nut shown in Figure 44 several turns, then thread the stop bolt inward several turns.

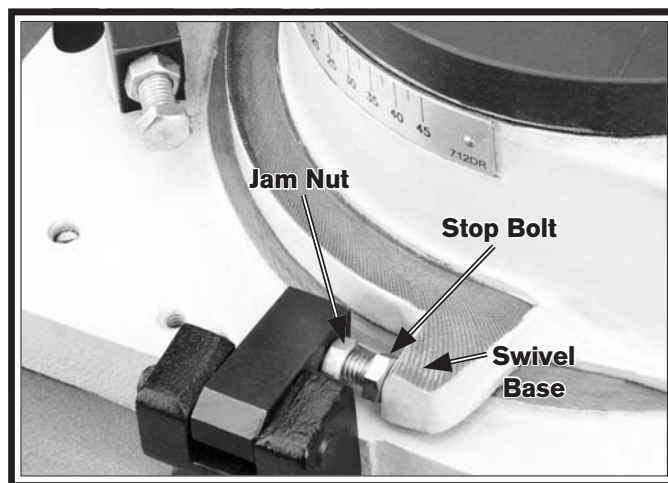


Figure 44. Stop adjustment.

5. Loosen the headstock lock lever, rotate the headstock so that the blade is square to the vise, then re-tighten the headstock lock lever.
6. Adjust the stop bolt as needed until it just touches the cast iron swivel base, as shown in Figure 44, then snug the jam nut against the stop block without turning the stop bolt.
7. Repeat this procedure for the 45°R and 45°L stops using a square and a 45° triangle (or an adjustable square), as shown in Figure 45.

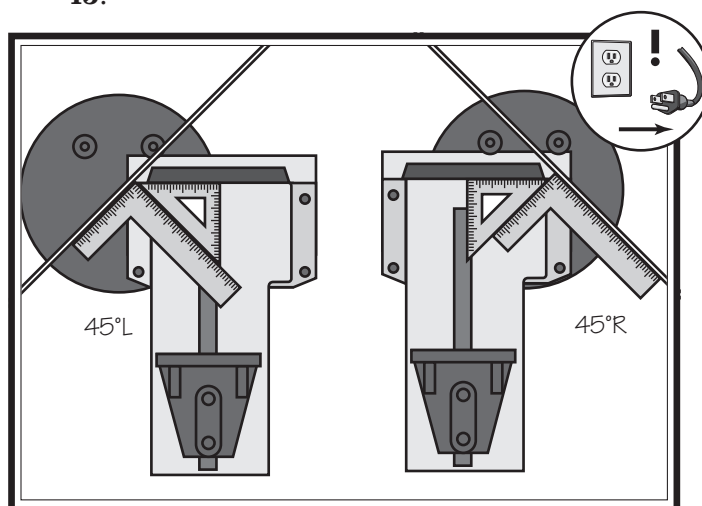


Figure 45. 45°L and 45°R stop adjustment.

Electrical Safety Instructions

These pages are accurate at the time of printing. In the constant effort to improve, however, we may make changes to the electrical systems of future machines. Study this section carefully. If you see differences between your machine and what is shown in this section, call Technical Support at (360) 734-1540 for assistance BEFORE making any changes to the wiring on your machine.

- Shock Hazard:** It is extremely dangerous to perform electrical or wiring tasks while the machine is connected to the power source. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. For your own safety, disconnect machine from the power source before servicing electrical components or performing any wiring tasks!
- Wire Connections:** All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.
- Modifications:** Using aftermarket parts or modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire.
- Motor Wiring:** The motor wiring shown in these diagrams is current at the time of printing, but it may not match your machine. Always use the wiring diagram inside the
- Circuit Requirements:** Connecting the machine to an improperly sized circuit will greatly increase the risk of fire. To minimize this risk, only connect the machine to a power circuit that meets the minimum requirements given in this manual.
- Capacitors/Inverters:** Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.
- Wire/Component Damage:** Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components before completing the task.
- Experiencing Difficulties:** If you are experiencing difficulties understanding the information included in this section, contact

WIRING DIAGRAM COLOR KEY

BLACK — Bk	BLUE WHITE — Bw	RED — Rd	PINK — Pk	WHITE — Wt
BLUE — Bl	GREEN — Gn	LIGHT BLUE — Lb	PURPLE — Pu	YELLOW GREEN — Yg
BROWN — Br	GRAY — Gy	ORANGE — Or	TUR-QUIOSE — Tu	YELLOW — Yl

NOTICE: The photos and diagrams included in this section are best viewed in color. You can see them in color at www.southbendlathe.com.

220V Conversion

Wiring diagrams are provided in this section showing the Model SB1019 wired for both 110V and 220V. Refer to these diagrams if needed when following this procedure.

Items Needed	Qty.
220V Switch (Part No. PSB1019204).....	1
Phillips Screwdriver #2	1
Wrench 18mm	1
Wire nut (sized for two 14 Ga. wires).....	1
Electrical Tape	As needed

To convert the Model SB1019 to 220V:

1. DISCONNECT BANDSAW FROM POWER!
2. Open the motor junction box, then loosen the wire nuts indicated in **Figure 46**. Remove wires #2 & #3 from the wire nuts.

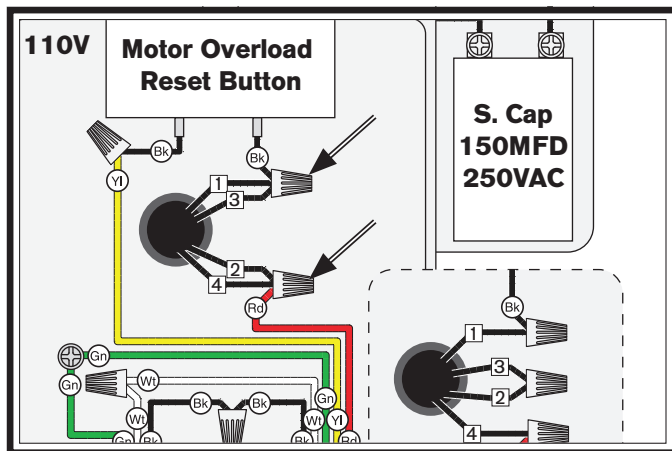


Figure 46. Wiring terminal locations.

3. Re-tighten the wire nuts, making sure wire #1 is still connected to the black wire coming from the motor overload reset button and that wire #4 is still connected to the red wire coming from the cord. Wrap both wire nuts and the end of the cords with electrical tape.

4. Use a wire nut to connect wires #2 & #3, then wrap them with electrical tape. Close the motor junction box.
5. Open the pump motor junction box and locate the motor terminal block shown in **Figure 47**.

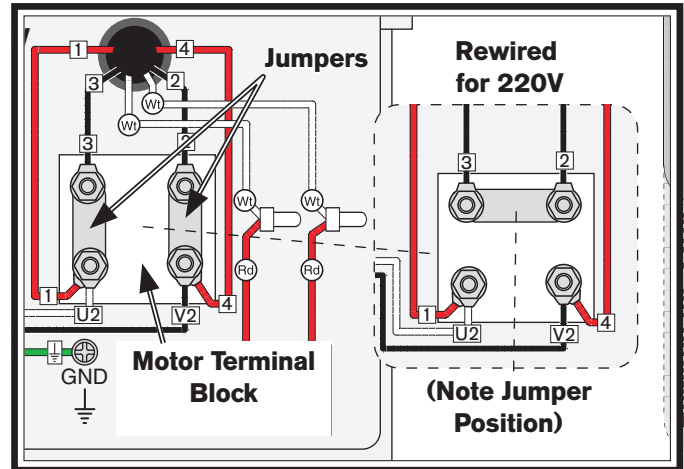
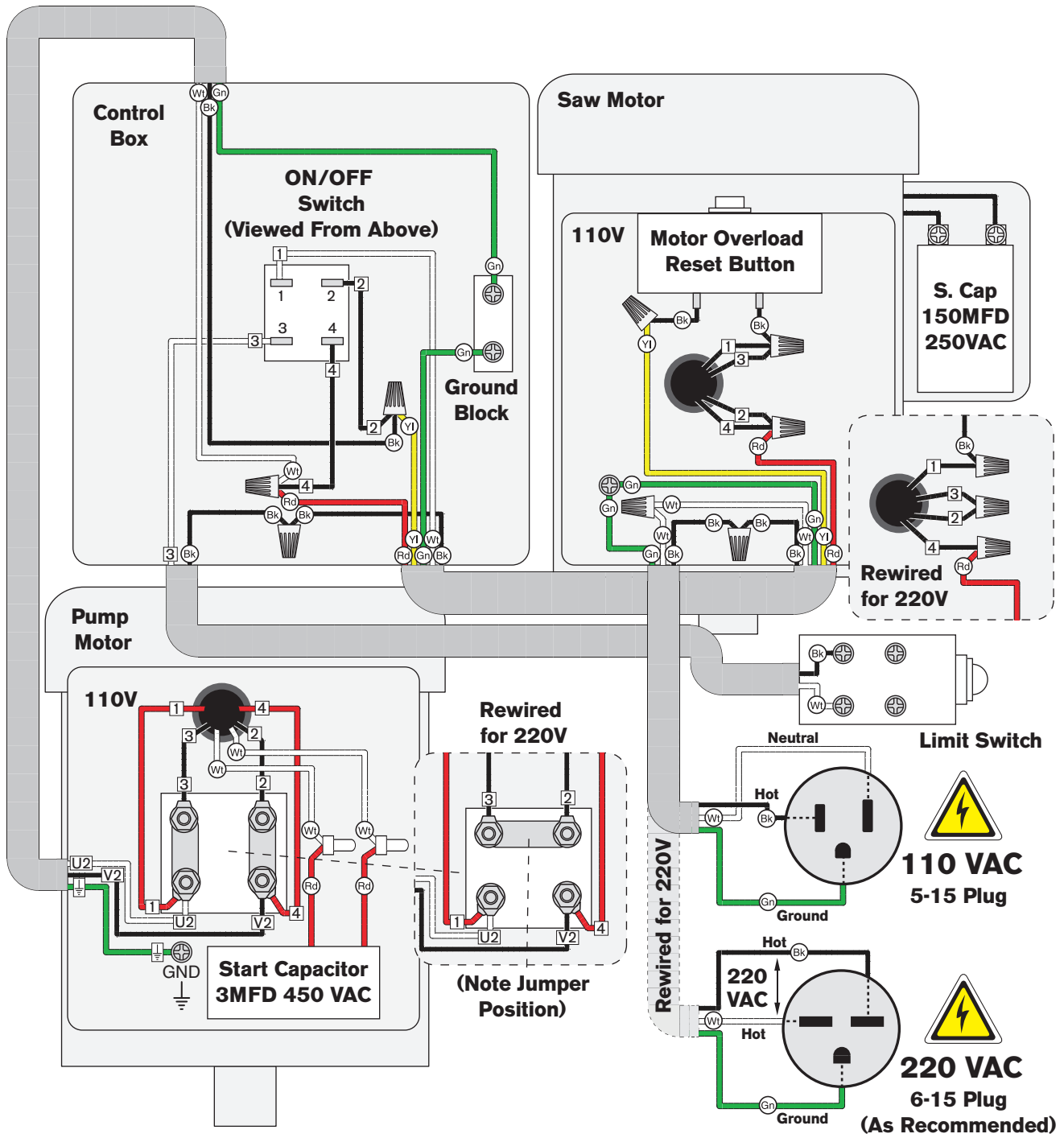


Figure 47. Rewired for 220V.

6. Remove the nuts that secure the metal jumpers on the terminal block. Stack the jumpers together, then place them both over the terminals shown on the right side of **Figure 47**.
7. Make sure none of the wires have moved from their original locations and the jumpers are positioned exactly as shown on the right side of **Figure 47**, then re-tighten the four hex nuts on the terminal block.

Wiring Diagram



READ PAGE 41 BEFORE DOING ANY WIRING!



Wiring Component Locations

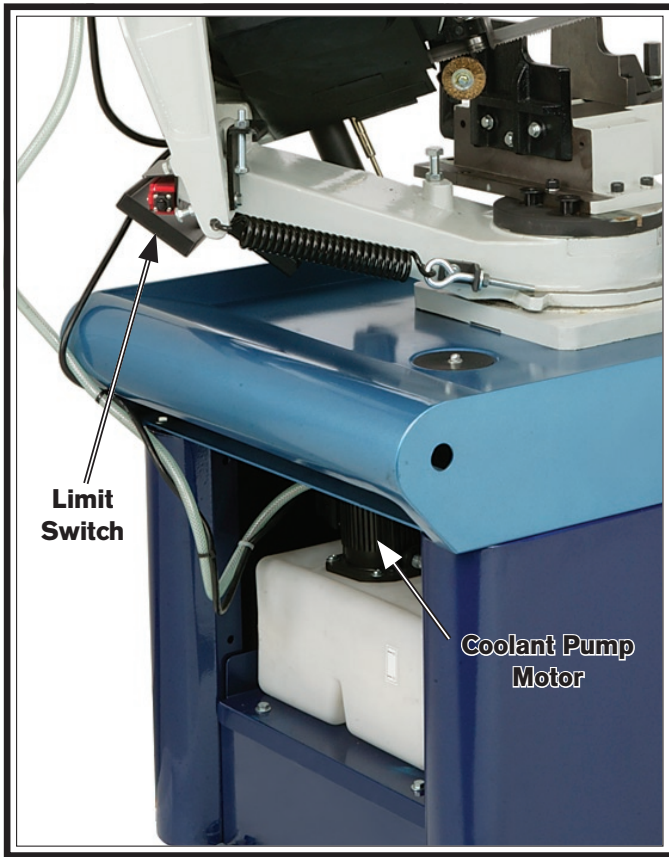


Figure 48. Limit switch and coolant pump locations.

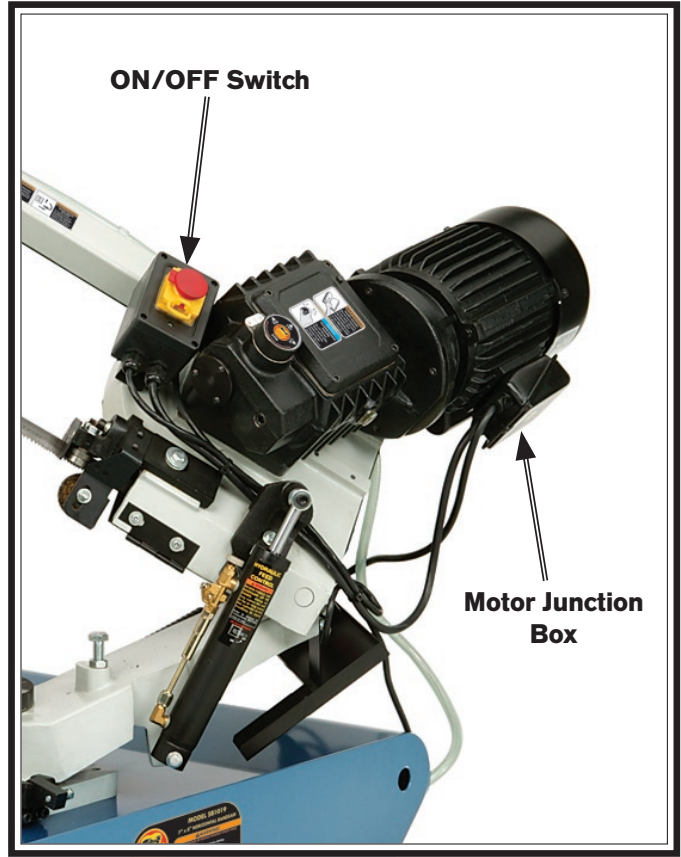
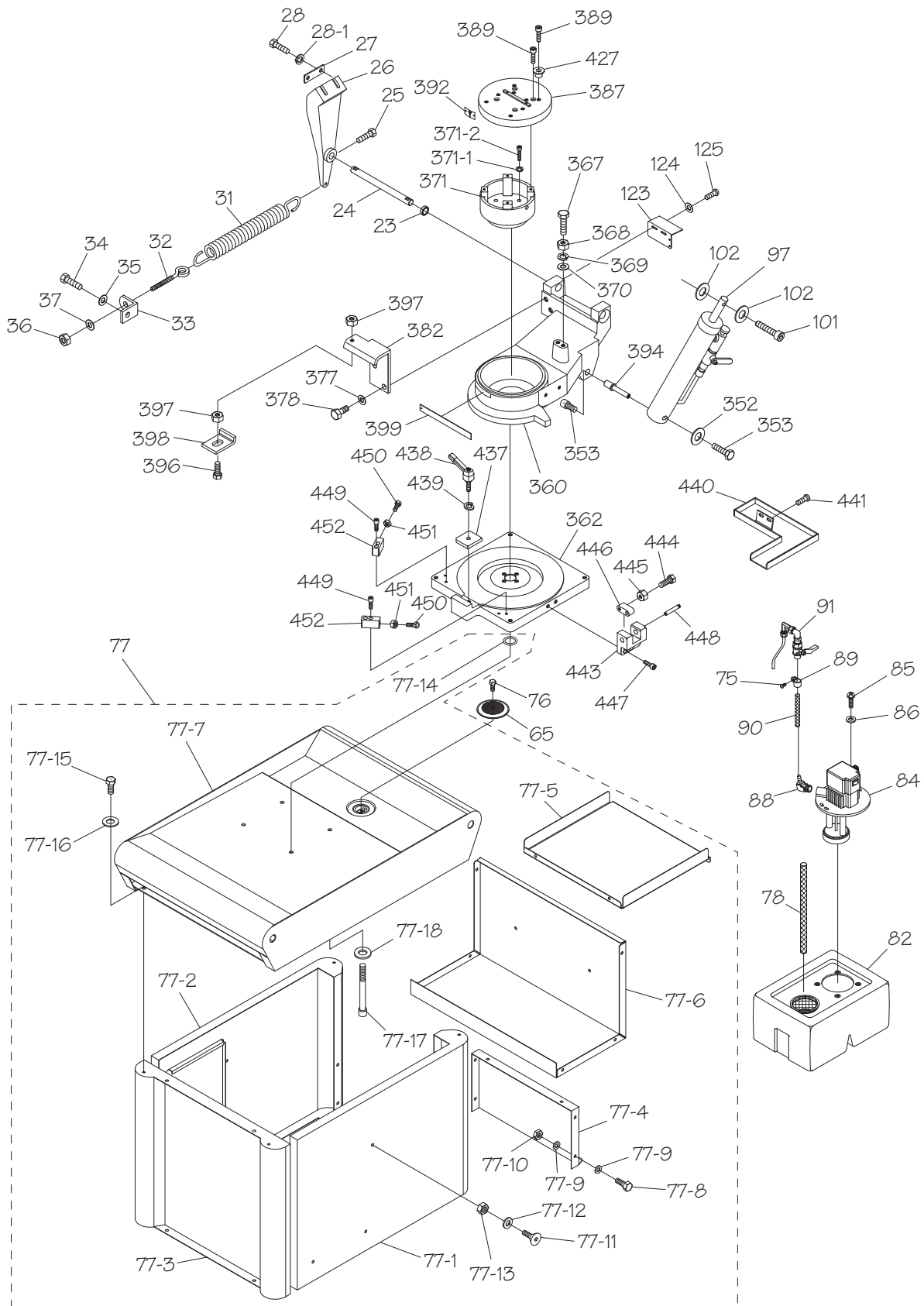


Figure 49. Wiring component locations.

Cabinet & Base

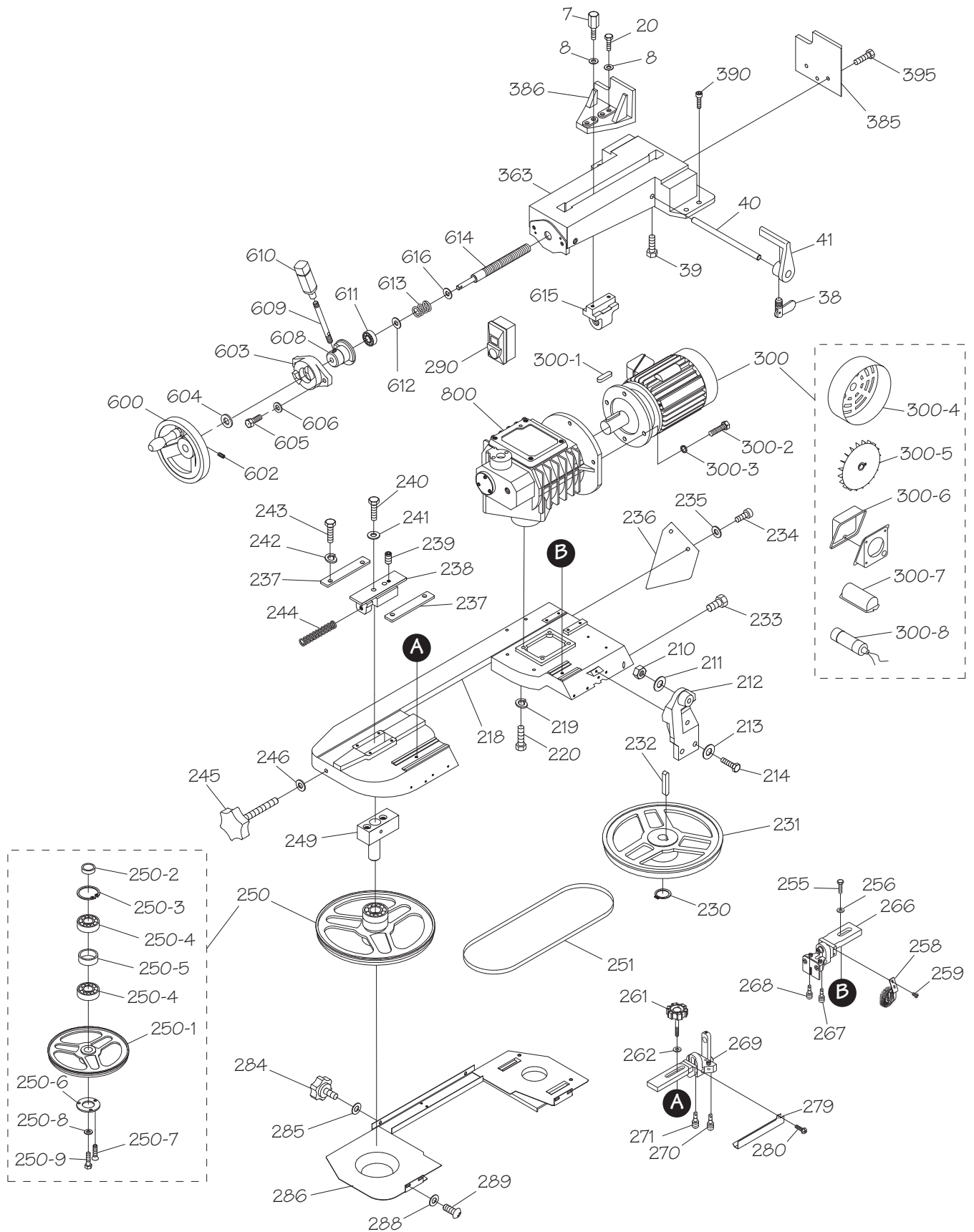


Cabinet & Base Parts List

REF	PART #	DESCRIPTION
23	PSB1019023	PIVOT ROD BUSHING
24	PSB1019024	PIVOT ROD
25	PB07	HEX BOLT 5/16-18 X 3/4
26	PSB1019026	PIVOT BRACKET
27	PSB1019027	BRACKET PLATE
28	PB16	HEX BOLT 3/8-16 X 1-1/2
28-1	PNO8	HEX NUT 3/8-16
31	PSB1019031	EXTENSION SPRING
32	PSB1019032	SPRING EYE BOLT 3/8-16
33	PSB1019033	SPRING BRACKET
34	PB07	HEX BOLT 5/16-18 X 3/4
35	PW07	FLAT WASHER 5/16
36	PNO8	HEX NUT 3/8-16
37	PW02	FLAT WASHER 3/8
65	PSB1019065	COOLANT SCREEN
75	PS06	PHLP HD SCR 10-24 X 3/8
76	PB19	HEX BOLT 1/4-20 X 1/2
77	PSB1019077	CABINET ASSEMBLY
77-1	PSB1019077-1	FRONT CABINET PANEL
77-2	PSB1019077-2	REAR CABINET PANEL W/DOOR
77-3	PSB1019077-3	LEFT CABINET PANEL
77-4	PSB1019077-4	RIGHT BOTTOM CABINET PANEL
77-5	PSB1019077-5	SHELF PANEL
77-6	PSB1019077-6	RIGHT TOP CABINET PANEL
77-7	PSB1019077-7	CABINET TOP
77-8	PB87M	HEX BOLT M8-1.25 X 15
77-9	PW01M	FLAT WASHER 8MM
77-10	PNO3M	HEX NUT M8-1.25
77-11	PFH38	FLAT HD CAP SCR M8-1.25 X 16
77-12	PW01M	FLAT WASHER 8MM
77-13	PNO3M	HEX NUT M8-1.25
77-14	PORP010	O-RING 9.8 X 1.9 P10
77-15	PB74M	HEX BOLT M10-1.5 X 20
77-16	PW04M	FLAT WASHER 10MM
77-17	PCAP35M	CAP SCREW M8-1.25 X 60
77-18	PW01M	FLAT WASHER 8MM
78	PSB1019078	COOLANT HOSE 3/4 X 8"
82	PSB1019082	COOLANT TANK ASSEMBLY
84	PSB1019084	COOLANT PUMP 1/8HP 110/220V 1PH
85	PS12	PHLP HD SCR 1/4-20 X 5/8
86	PW06	FLAT WASHER 1/4
88	PSB1019088	PIPE ELBOW 3/8 PT X 5/16"
89	PSB1019089	HOSE CLIP 5/8"
90	PSB1019090	COOLANT HOSE 8 X 2000MM
91	PSB1019091	COOLANT NOZZLE ASSEMBLY

REF	PART #	DESCRIPTION
97	PSB1019097	HYDRAULIC CYLINDER ASSEMBLY
101	PCAP29	CAP SCREW 3/8-16 X 2-1/4
102	PW02	FLAT WASHER 3/8
123	PSB1019123	BRACKET
124	PW02M	FLAT WASHER 5MM
125	PS09M	PHLP HD SCR M5-.8 X 10
352	PW07	FLAT WASHER 5/16
353	PB09	HEX BOLT 5/16-18 X 1/2
360	PSB1019360	SWIVEL ARM
362	PSB1019362	SWIVEL BASE
367	PB27	HEX BOLT 1/2-13 X 2-1/2
368	PNO6	HEX NUT 1/2-13
369	PLW07	LOCK WASHER 1/2
370	PW01	FLAT WASHER 1/2
371	PSB1019371	VICE PIVOT BASE
371-1	PLW04	LOCK WASHER 3/8
371-2	PCAP26	CAP SCREW 3/8-16 X 1-1/2
377	PW07	FLAT WASHER 5/16
378	PB07	HEX BOLT 5/16-18 X 3/4
382	PSB1019382	STOP BOLT BRACKET
387	PSB1019387	PIVOT BASE CAP
389	PCAP31M	CAP SCREW M8-1.25 X 25
392	PSB1019392	SCALE INDICATOR
394	PSB1019394	CYLINDER PIVOT ROD
396	PCB12	CARRIAGE BOLT 3/8-16 X 2
397	PNO2	HEX NUT 5/16-18
398	PSB1019398	STOP BRACKET
399	PSB1019399	DEGREE SCALE
427	PSB1019427	STEP BUSHING
437	PSB1019437	SWIVEL LOCK PLATE
438	PSB1019438	LOCK LEVER 3/8-16
439	PLW04	LOCK WASHER 3/8
440	PSB1019440	SPLASH PAN
441	PS38	PHLP HD SCR 5/16-18 X 1/2
443	PSB1019443	FLIP STOP BRACKET
444	PB58	HEX BOLT 3/8-16 X 2
445	PNO8	HEX NUT 3/8-16
446	PSB1019446	FLIP STOP BLOCK
447	PCAP30	CAP SCREW 5/16-18 X 1/2
448	PSB1019448	PIVOT PIN
449	PCAP32	CAP SCREW 1/4-20 X 1-1/4
450	PB58	HEX BOLT 3/8-16 X 2
451	PNO8	HEX NUT 3/8-16
452	PSB1019452	SWIVEL LOCK BLOCK

Motor & Head

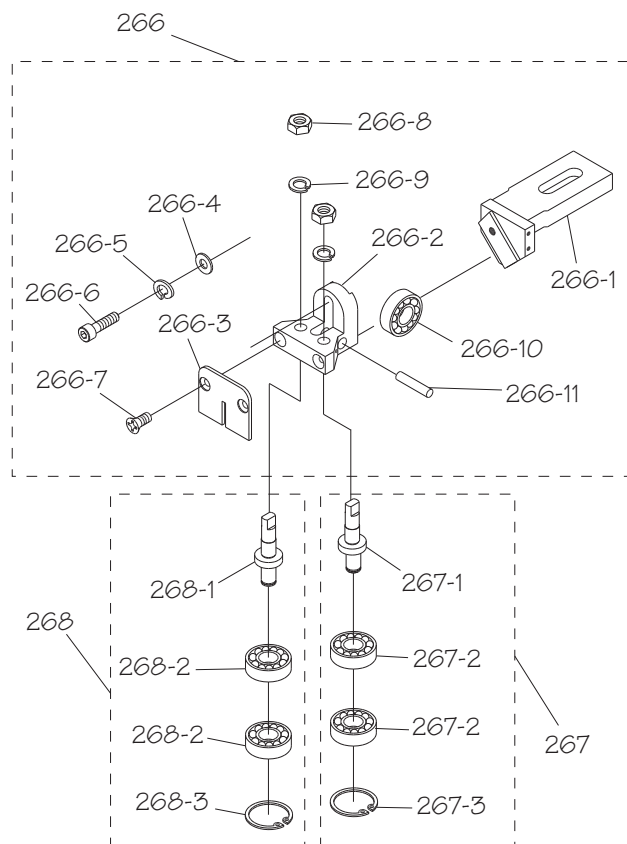
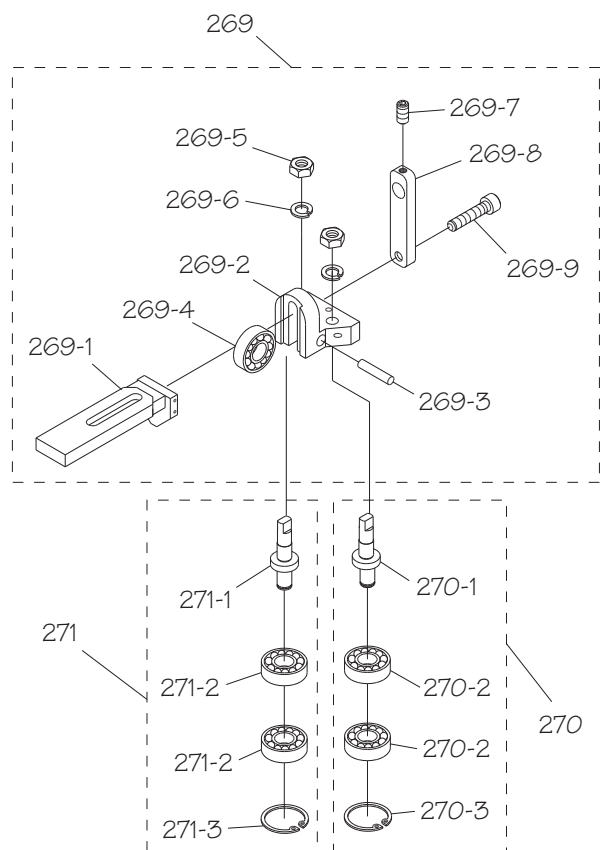


Motor & Head Parts List

REF	PART #	DESCRIPTION
7	PSB1019007	HEX LOCK BOLT 3/8-16
8	PW02	FLAT WASHER 3/8
20	PB16	HEX BOLT 3/8-16 X 1-1/2
38	PSB1019038	WORK STOP THUMB SCREW
39	PB07	HEX BOLT 5/16-18 X 3/4
40	PSB1019040	WORK STOP ROD
41	PSB1019041	WORK STOP
210	PN08	HEX NUT 3/8-16
211	PW02	FLAT WASHER 3/8
212	PSB1019212	CYLINDER SUPPORT
213	PW07	FLAT WASHER 5/16
214	PB03	HEX BOLT 5/16-18 X 1
218	PSB1019218	SAW BOW
219	PLW04	LOCK WASHER 3/8
220	PB24	HEX BOLT 3/8-16 X 1-1/4
230	PR11M	EXT RETAINING RING 25MM
231	PSB1019231	DRIVE WHEEL
232	PK07M	KEY 6 X 6 X 20
233	PB07	HEX BOLT 5/16-18 X 3/4
234	PB02	HEX BOLT 1/4-20 X 5/8
235	PW06	FLAT WASHER 1/4
236	PSB1019236	SUPPORT PLATE
237	PSB1019237	SLIDING PLATE
238	PSB1019238	BLADE TENSION SLIDING BLOCK
239	PS518	SET SCREW 5/16-18 X 3/4
240	PB11	HEX BOLT 5/16-18 X 1-1/2
241	PW07	FLAT WASHER 5/16
242	PLW01	LOCK WASHER 5/16
243	PB07	HEX BOLT 5/16-18 X 3/4
244	PSB1019244	COMPRESSION SPRING
245	PSB1019245	ADJUSTMENT KNOB BOLT 3/8-16
246	PW02	FLAT WASHER 3/8
249	PSB1019249	IDLER WHEEL SHAFT ASSEMBLY
250	PSB1019250	IDLER WHEEL ASSEMBLY
250-1	PSB1019250-1	IDLER WHEEL
250-2	PSB1019250-2	SPACER
250-3	PR21M	INT RETAINING RING 35MM
250-4	P6202ZZ	BALL BEARING 6202ZZ
250-5	PSB1019250-5	BEARING SPACER
250-6	PSB1019250-6	BEARING END CAP
250-7	PFH01	FLAT HD SCR 10-24 X 3/8
250-8	PW07	FLAT WASHER 5/16
250-9	PB07	HEX BOLT 5/16-18 X 3/4
251	PSB1019251	BLADE 0.032 X 34 X 93 6-10TPI
255	PB24	HEX BOLT 3/8-16 X 1-1/4
256	PW02	FLAT WASHER 3/8
258	PSB1019258	BRUSH ASSEMBLY

REF	PART #	DESCRIPTION
259	PS06	PHLP HD SCR 10-24 X 3/8
261	PSB1019261	BLADE GUIDE KNOB BOLT 3/8-16
262	PW02	FLAT WASHER 3/8
266	PSB1019266	LOWER GUIDE BRACKET ASSEMBLY
267	PSB1019267	LOWER GUIDE ECCENTRIC ASSY
268	PSB1019268	LOWER GUIDE SHAFT ASSEMBLY
269	PSB1019269	UPPER GUIDE BRACKET ASSEMBLY
270	PSB1019270	UPPER GUIDE ECCENTRIC ASSY
271	PSB1019271	UPPER GUIDE SHAFT ASSEMBLY
279	PSB1019279	UPPER GUIDE BLADE COVER
280	PS23	PHLP HD SCR 8-32 X 1/4
284	PSB1019284	KNOB BOLT 1/4-20
285	PW06	FLAT WASHER 1/4
286	PSB1019286	REAR BLADE COVER
288	PW06	FLAT WASHER 1/4
289	PS04	PHLP HD SCR 1/4-20 X 1/2
290	PSB1019290	SWITCH ASSEMBLY
300	PSB1019300	MOTOR 1-1/2HP 110/220V 1PH
300-1	PK12M	KEY 5 X 5 X 30
300-2	PB32M	HEX BOLT M10-1.5 X 25
300-3	PLW06M	LOCK WASHER 10MM
300-4	PSB1019300-4	MOTOR FAN COVER
300-5	PSB1019300-5	MOTOR FAN
300-6	PSB1019300-6	MOTOR JUNCTION BOX
300-7	PSB1019300-7	CAPACITOR COVER
300-8	PC150D	S CAP 150M 250V 1-3/8 X 2-3/4
363	PSB1019363	VICE BASE
385	PSB1019385	LARGE VISE JAW
386	PSB1019386	SMALL VISE JAW
390	PCAP72M	CAP SCREW M10-1.5 X 30
395	PB12	HEX BOLT 5/16-18 X 1-1/4
600	PSB1019600	VICE HANDWHEEL
602	PS507	SET SCREW 1/4-20 X 1/2
603	PSB1019603	VICE LEADSCREW END CAP
604	PW06M	FLAT WASHER 12MM
605	PB24	HEX BOLT 3/8-16 X 1-1/4
606	PW02	FLAT WASHER 3/8
608	PSB1019608	CONCENTRIC PRESSURE SHAFT
609	PSB1019609	PRESSURE LEVER
610	PSB1019610	LEVER KNOB
611	P51101	THRUST BEARING 51101
612	PW06M	FLAT WASHER 12MM
613	PSB1019613	COMPRESSION SPRING
614	PSB1019614	VICE LEADSCREW
615	PSB1019615	VICE LEADSCREW NUT
616	PW01	FLAT WASHER 1/2
800	PSB1019800	GEARBOX ASSEMBLY

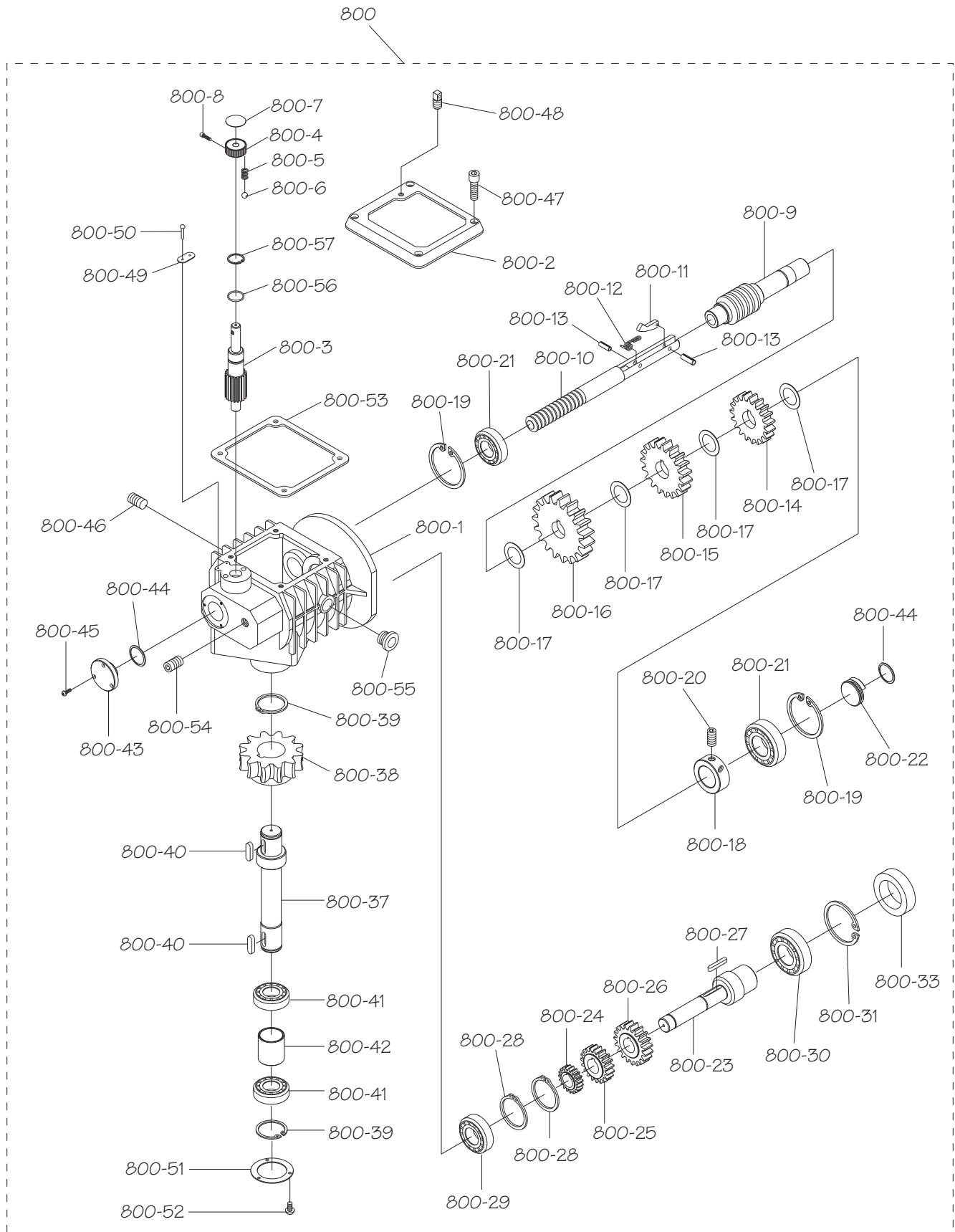
Blade Guide Assemblies



REF	PART #	DESCRIPTION
266	PSB1019266	LOWER GUIDE BRACKET ASSEMBLY
266-1	PSB1019266-1	SLIDING BRACKET
266-2	PSB1019266-2	BLADE GUIDE BRACKET
266-3	PSB1019266-3	DEFLECTOR PLATE
266-4	PW07	FLAT WASHER 5/16
266-5	PLW01	LOCK WASHER 5/16
266-6	PCAP11	CAP SCREW 5/16-18 X 1-1/4
266-7	PFH03	FLAT HD SCR 1/4-20 X 1/2
266-8	PN11	HEX NUT 3/8-24
266-9	PLW04	LOCK WASHER 3/8
266-10	P6000ZZ	BALL BEARING 6000ZZ
266-11	PSB1019266-11	BEARING PIN
267	PSB1019267	LOWER GUIDE ECCENTRIC ASSY
267-1	PSB1019267-1	GUIDE PIVOT SHAFT
267-2	P6000ZZ	BALL BEARING 6000ZZ
267-3	PR45M	INT RETAINING RING 10MM
268	PSB1019268	LOWER GUIDE SHAFT ASSEMBLY
268-1	PSB1019268-1	GUIDE BEARING SHAFT
268-2	P6000ZZ	BALL BEARING 6000ZZ
268-3	PR45M	INT RETAINING RING 10MM

REF	PART #	DESCRIPTION
268-3	PR45M	INT RETAINING RING 10MM
269	PSB1019269	UPPER GUIDE BRACKET ASSEMBLY
269-1	PSB1019269-1	SLIDE BRACKET
269-2	PSB1019269-2	BLADE GUIDE BRACKET
269-3	PSB1019266-11	BEARING PIN
269-4	P6000ZZ	BALL BEARING 6000ZZ
269-5	PN11	HEX NUT 3/8-24
269-6	PLW04	LOCK WASHER 3/8
269-7	PSS03	SET SCREW 1/4-20 X 3/8
269-8	PSB1019269-8	COOLANT NOZZLE BRACKET
269-9	PB12	HEX BOLT 5/16-18 X 1-1/4
270	PSB1019270	UPPER GUIDE ECCENTRIC ASSY
270-1	PSB1019267-1	GUIDE PIVOT SHAFT
270-2	P6000ZZ	BALL BEARING 6000ZZ
270-3	PR45M	INT RETAINING RING 10MM
271	PSB1019271	UPPER GUIDE SHAFT ASSEMBLY
271-1	PSB1019268-1	GUIDE BEARING SHAFT
271-2	P6000ZZ	BALL BEARING 6000ZZ
271-3	PR45M	INT RETAINING RING 10MM

Gearbox

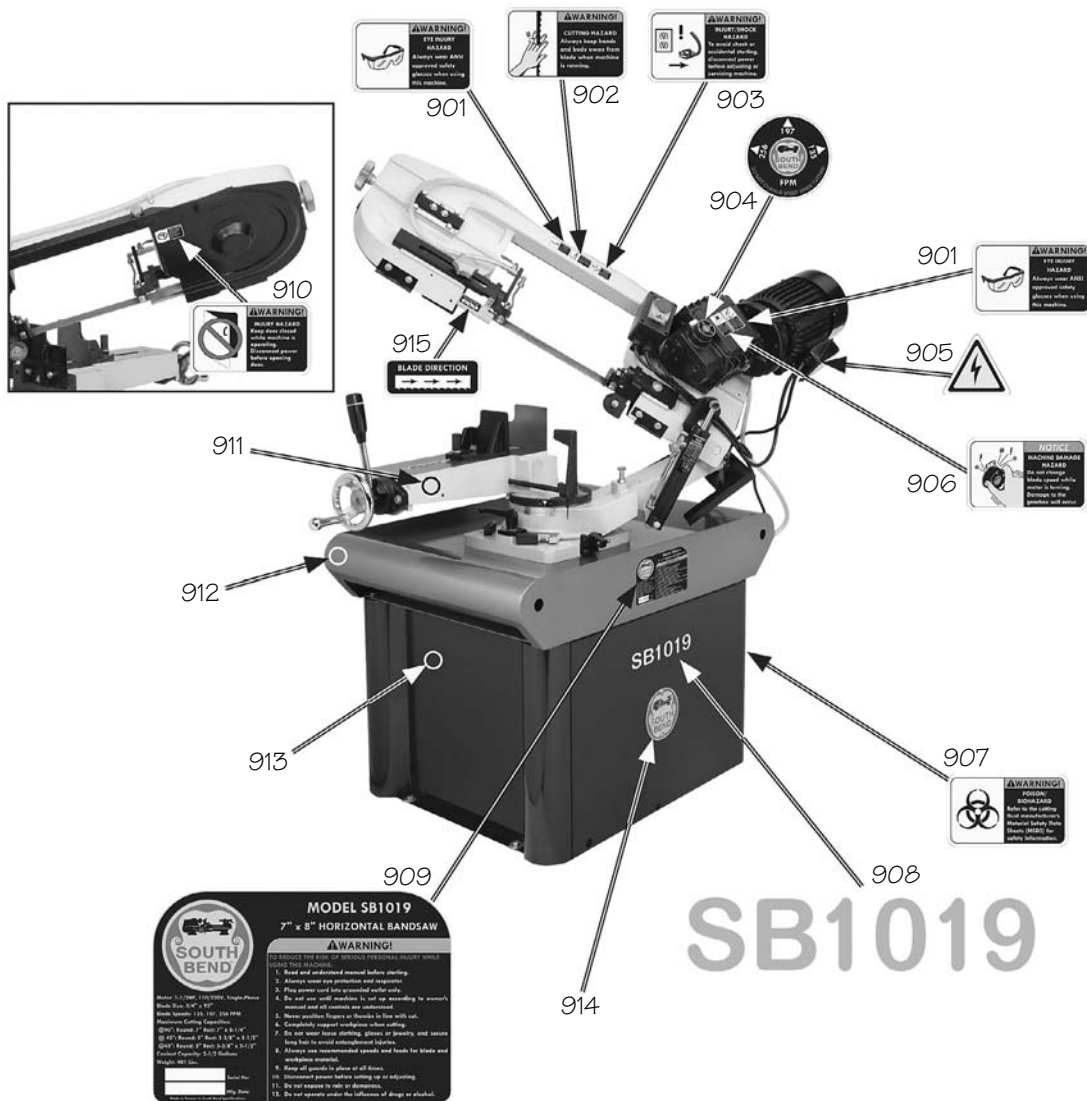


Gearbox Parts List

REF	PART #	DESCRIPTION
800	PSB1019800	GEARBOX ASSEMBLY
800-1	PSB1019800-1	GEARBOX CASTING
800-2	PSB1019800-2	GEARBOX COVER
800-3	PSB1019800-3	SPEED CHANGE GEAR SHAFT
800-4	PSB1019800-4	SPEED CHANGE KNOB
800-5	PSB1019800-5	COMPRESSION SPRING
800-6	PSTB002M	STEEL BALL 8MM
800-7	PSB1019800-7	SPEED INDICATOR PLATE
800-8	PCAP13M	CAP SCREW M8-1.25 X 30
800-9	PSB1019800-9	WORM SHAFT
800-10	PSB1019800-10	SPEED CHANGE ROD
800-11	PSB1019800-11	SPEED CHANGE KEY
800-12	PSB1019800-12	TORSION SPRING
800-13	PRP44M	ROLL PIN 3 X 10
800-14	PSB1019800-14	GEAR 48T
800-15	PSB1019800-15	GEAR 52T
800-16	PSB1019800-16	GEAR 76T
800-17	PSB1019800-17	GEAR SPACER
800-18	PSB1019800-18	LOCK COLLAR
800-19	PR21M	INT RETAINING RING 35MM
800-20	PSS02M	SET SCREW M6-1 X 6
800-21	P6003LLB	BALL BEARING 6003LLB
800-22	PSB1019800-22	RIGHT WORM GEAR SHAFT COVER
800-23	PSB1019800-23	GEAR SHAFT
800-24	PSB1019800-24	GEAR 20T
800-25	PSB1019800-25	GEAR 20T
800-26	PSB1019800-26	GEAR 24T

REF	PART #	DESCRIPTION
800-27	PK126M	KEY 5 X 5 X 32
800-28	PR18M	EXT RETAINING RING 17MM
800-29	P6003LLB	BALL BEARING 6003LLB
800-30	P6007LLB	BALL BEARING 6007LLB
800-31	PR38M	INT RETAINING RING 62MM
800-33	PSB1019800-33	OIL SEAL 8 X 35 X 62MM
800-37	PSB1019800-37	DRIVE SHAFT
800-38	PSB1019800-38	WORM GEAR
800-39	PR66M	INT RETAINING RING 25MM
800-40	PK07M	KEY 6 X 6 X 20
800-41	P6205LLB	BALL BEARING 6205LLB
800-42	PSB1019800-42	BEARING SPACER
800-43	PSB1019800-43	LEFT WORM GEAR SHAFT COVER
800-44	PORG030	O-RING 3.1 X 29.4 G30
800-45	PS08M	PHLP HD SCR M5-.8 X 12
800-46	PSB1019800-46	PLUG M5-.8 X 12
800-47	PCAP02M	CAP SCREW M6-1 X 20
800-48	PSB1019800-48	VENT PLUG
800-49	PSB1019800-49	SPEED KNOB INDICATOR
800-50	PRIV003M	STEEL FLUTED RIVET 2 X 4MM
800-51	PSB1019800-51	BEARING COVER
800-52	PS09M	PHLP HD SCR M5-.8 X 10
800-53	PSB1019800-53	GEARBOX COVER GASKET
800-54	PSB1019800-54	PLUG 1/4PT
800-55	PSB1019800-55	OIL SIGHT GLASS 19MM
800-56	PORP016	O-RING 15.8 X 2.4 P16
800-57	PR83M	INT RETAINING RING 20MM

Machine Labels



REF	PART #	DESCRIPTION
901	PSBLABEL04HS	EYE INJURY HAZARD LABEL
902	PSBLABEL14HS	CUTTING HAZARD LABEL
903	PSBLABEL02HS	DISCONNECT POWER LABEL
904	PSB1019904	SPEED DIAL LABEL
905	PSBLABEL15L	ELECTRICITY LABEL
906	PSB1019906	MACHINE DAMAGE HAZARD LABEL
907	PSBLABEL06HL	BIOHAZARD WARNING LABEL
908	PSB1019908	MODEL NUMBER LABEL

REF	PART #	DESCRIPTION
909	PSB1019909	MACHINE ID LABEL
910	PSBLABEL13HS	KEEP DOOR CLOSED LABEL
911	PSBPAIN01	SB GRAY TOUCH-UP PAINT
912	PSBPAIN02	SB LIGHT BLUE TOUCH-UP PAINT
913	PSBPAIN03	SB DARK BLUE TOUCH-UP PAINT
914	SB1319	SOUTH BEND NAMEPLATE 90MM
915	PSB1019915	BLADE DIRECTION LABEL

! WARNING

The safety labels provided with your machine are used to make the operator aware of the machine hazards and ways to prevent injury. The owner of this machine **MUST** maintain the original location and readability of these safety labels. If any label is removed or becomes unreadable, **REPLACE** that label before using the machine again. Contact South Bend Lathe Co. at (360) 734-1540 or www.southbendlathe.com to order new labels.

This quality product is warranted by South Bend Lathe Company to the original buyer for one year from the date of purchase. This warranty does not apply to consumable parts, or defects due to any kind of misuse, abuse, negligence, accidents, repairs, alterations or lack of maintenance. We do not reimburse for third party repairs. In no event shall we be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our products.

We do not warrant or represent that this machine complies with the provisions of any law, act, code, regulation, or standard of any domestic or foreign government, industry, or authority. In no event shall South Bend's liability under this warranty exceed the original purchase price paid for this machine. Any legal actions brought against South Bend Lathe Company shall be tried in the State of Washington, County of Whatcom.

This is the sole written warranty for this machine. Any and all warranties that may be implied by law, including any merchantability or fitness, for any purpose, are hereby limited to the duration of this warranty. To take advantage of this warranty, contact us by mail or phone to give us the details of the problem you are having.

Thank you for your business and continued support.



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